FIG. 6A FIG. 6B FIG. 6C

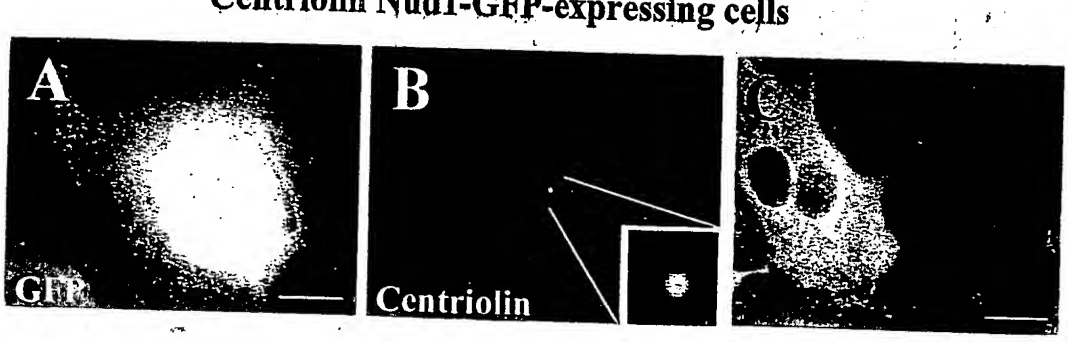


FIG. 6D

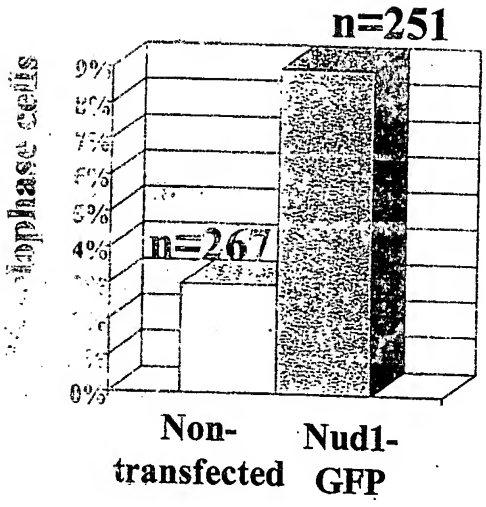


FIG. 6E

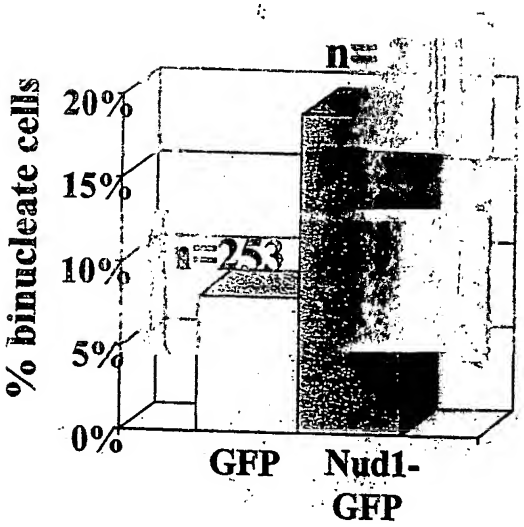


FIG. 5A

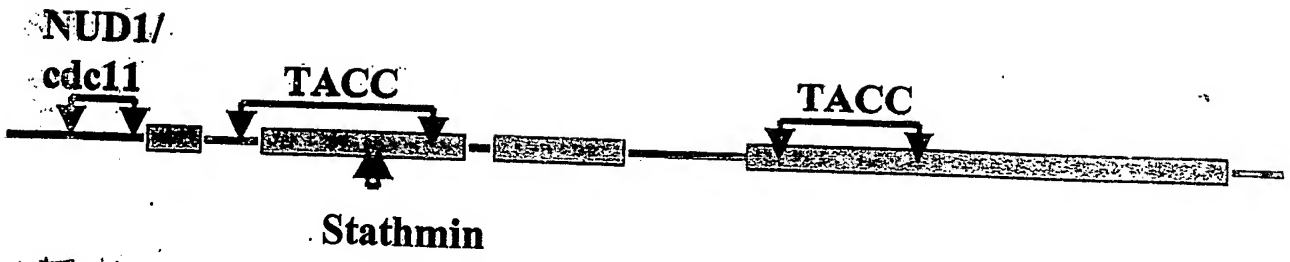


FIG. 5B

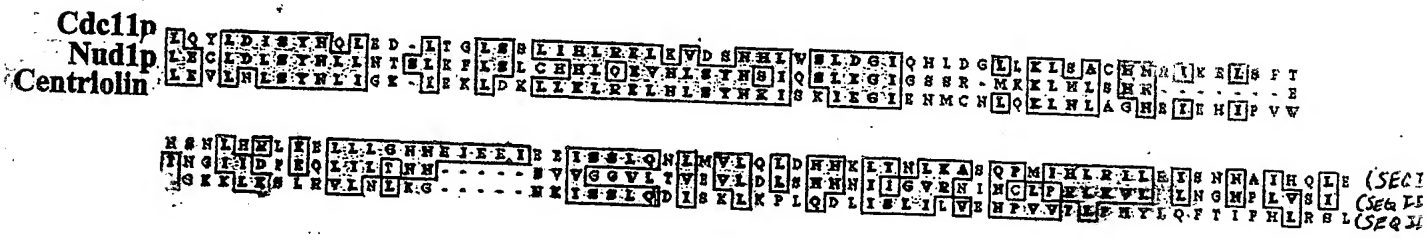


FIG. 5C

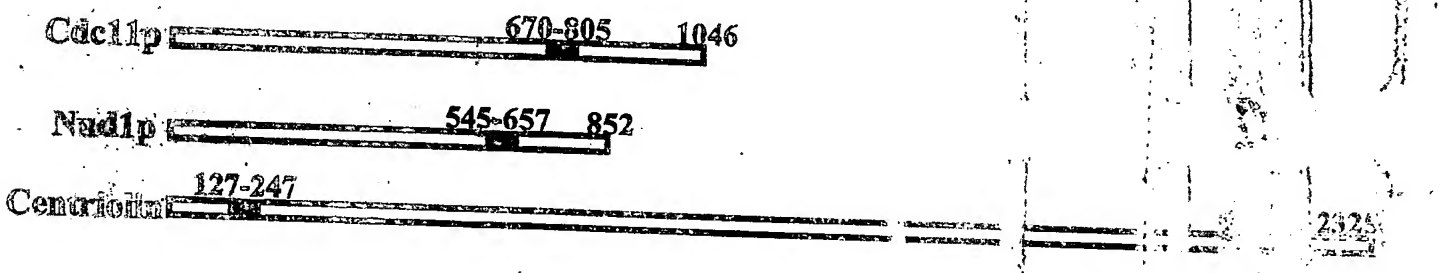


FIG. 5D

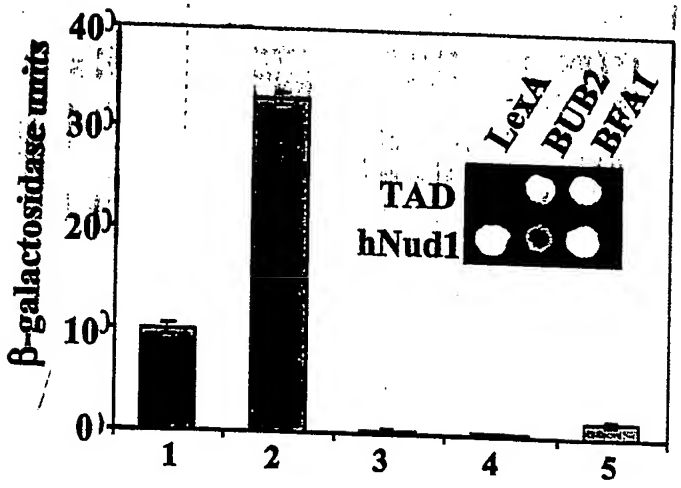


FIG. 5E

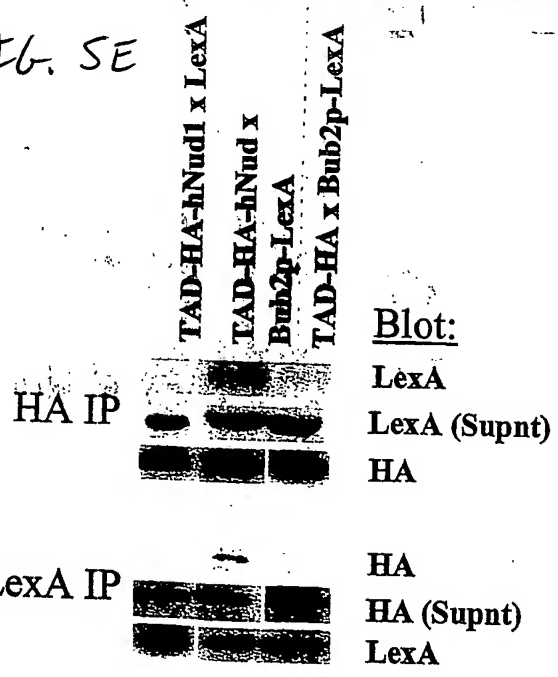


FIG. 6A FIG. 6B FIG. 6C

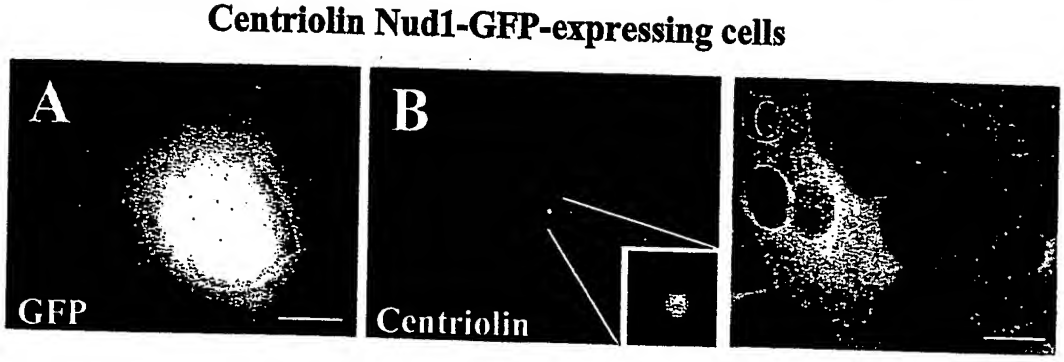


FIG. 6D

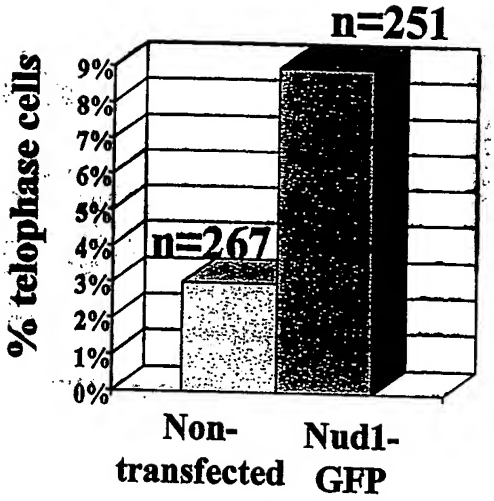


FIG. 6E

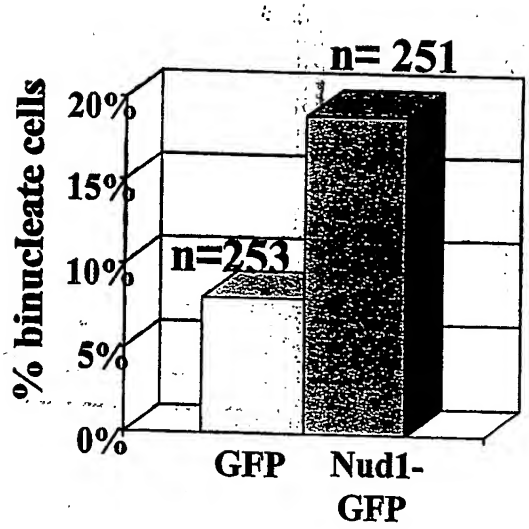


FIG. 7A

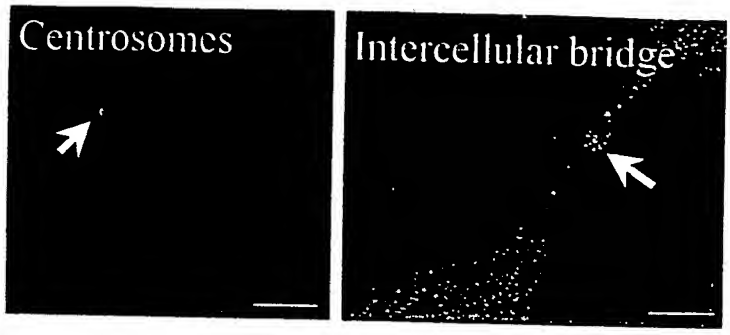


FIG. 7B

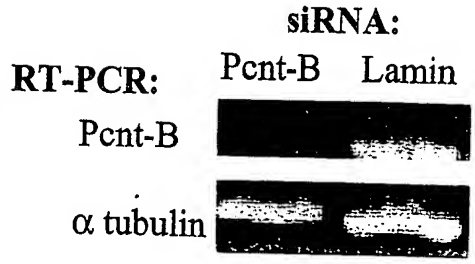


FIG. 7C

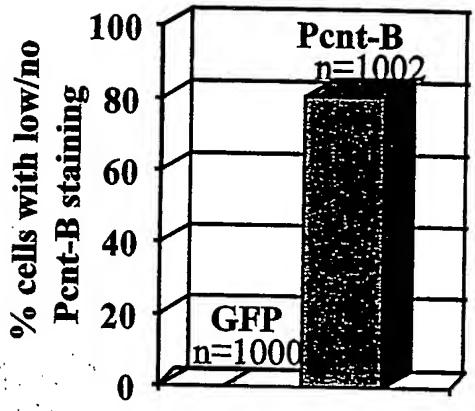


FIG. 7D

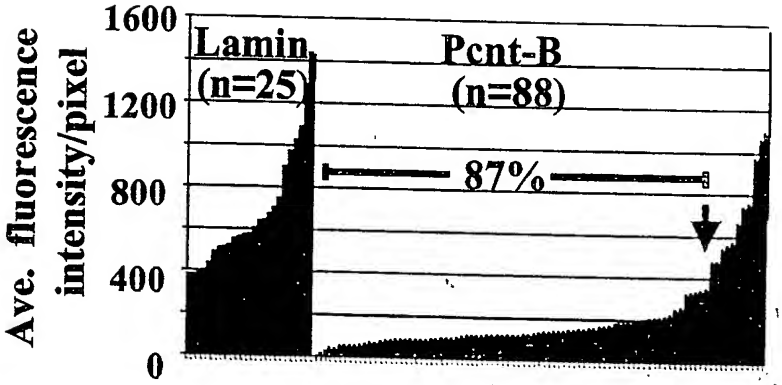


FIG. 7E

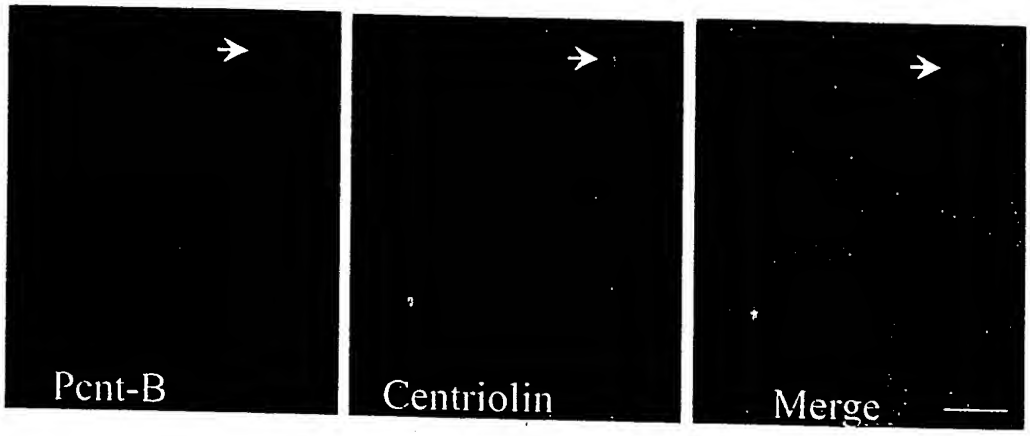
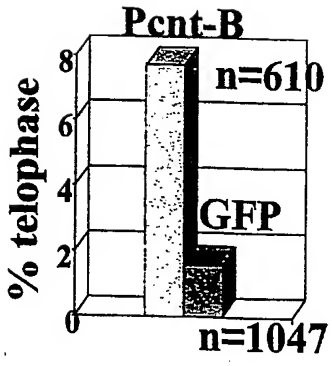


FIG. 7F



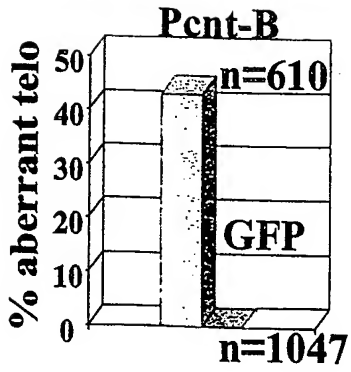


FIG. 7G

FIG. 3A

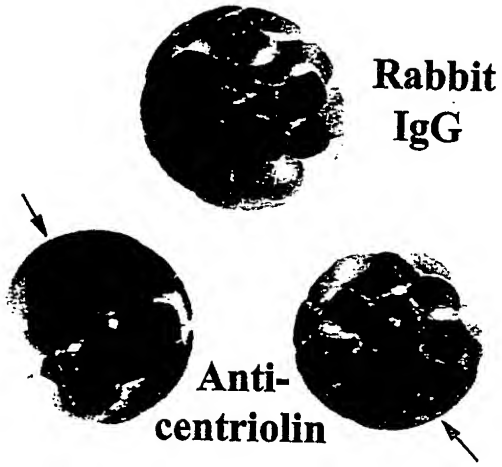


FIG. 3C

FIG. 3B

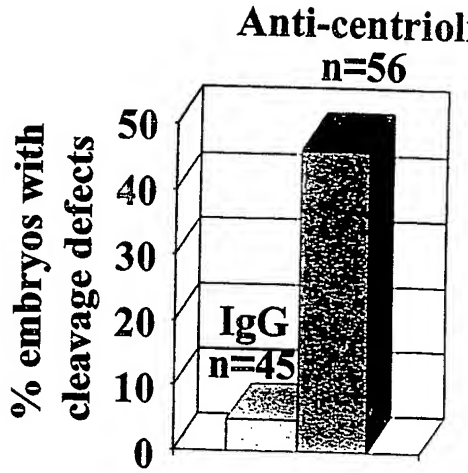


FIG. 3D

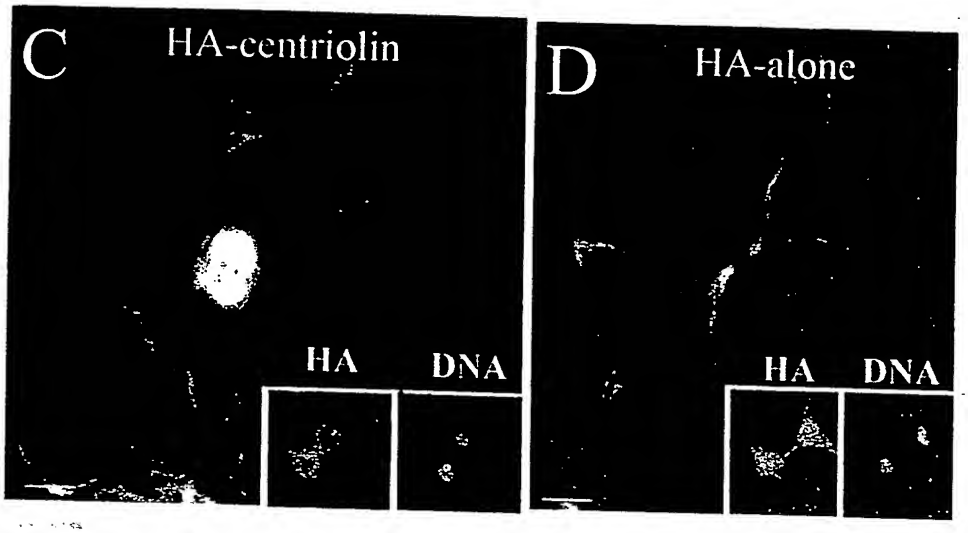


FIG. 3E

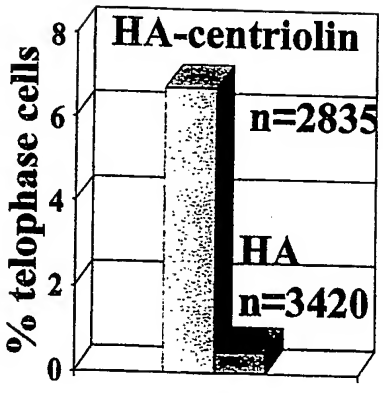


FIG. 3F

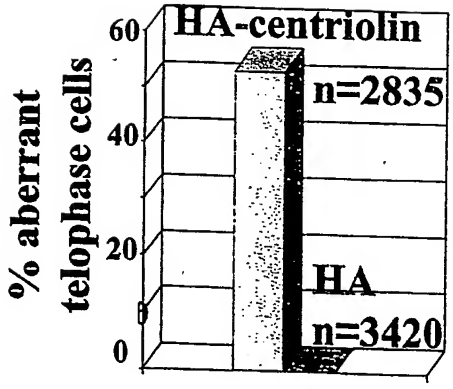


FIG. 3G

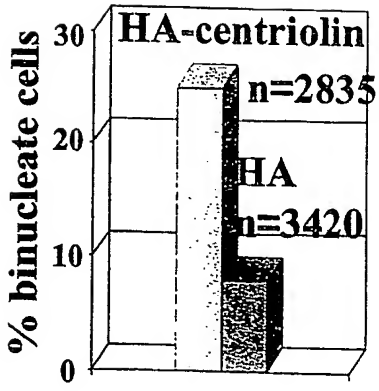


FIG 2A

FIG 2B

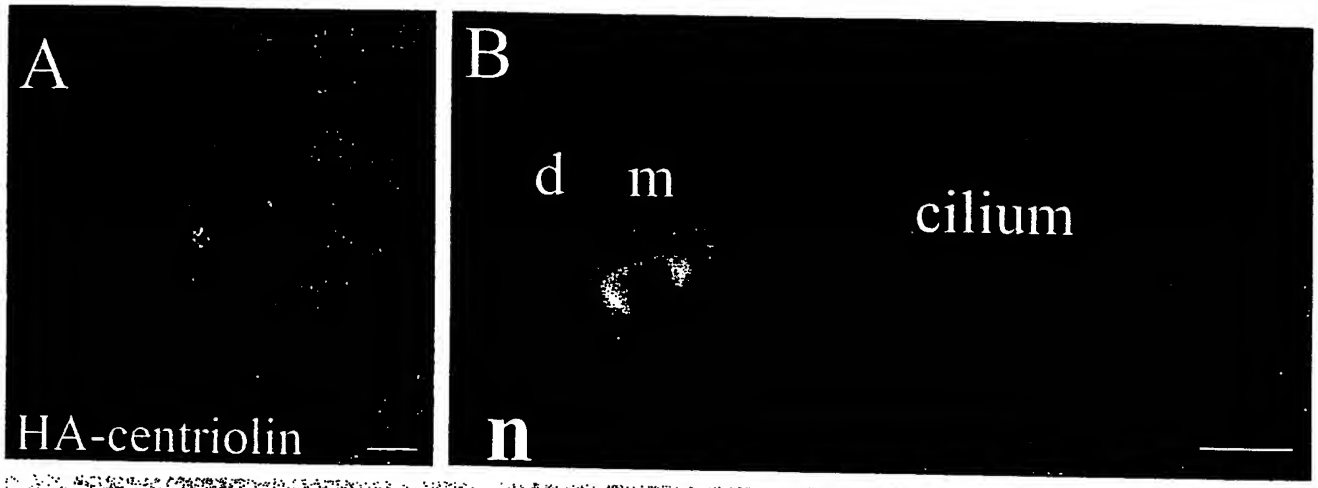


FIG2C

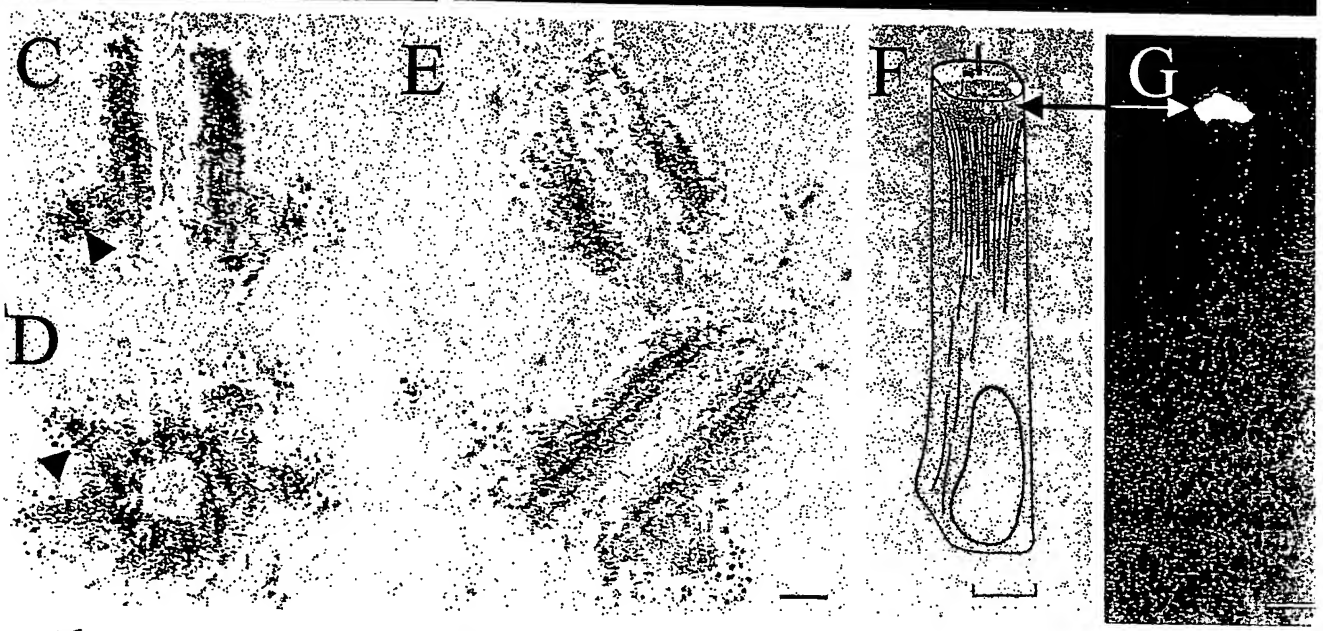


FIG 2D

FIG 2E

FIG. 2F

FIG. 2G

FIG 1A

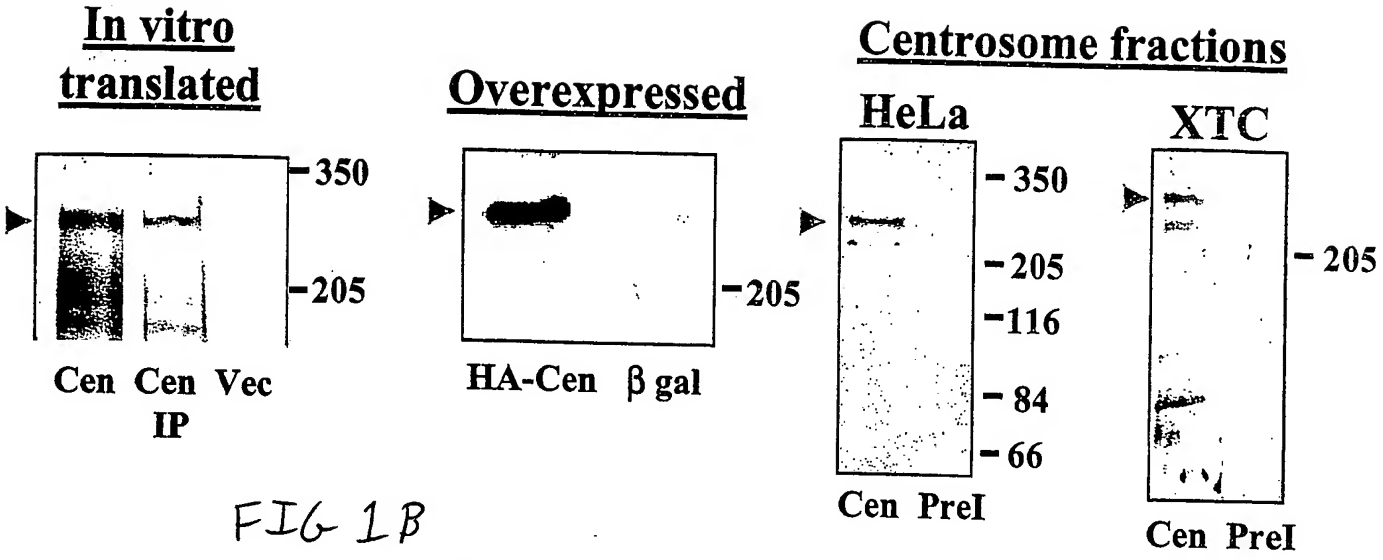

In vitro translated
Overexpressed
Centrosome fractions
HeLa
XTC
350
205
205
350
205
116
84
66
205
Cen Cen Vec
IP
HA-Cen β gal
Cen PreI
Cen PreI

FIG 1B

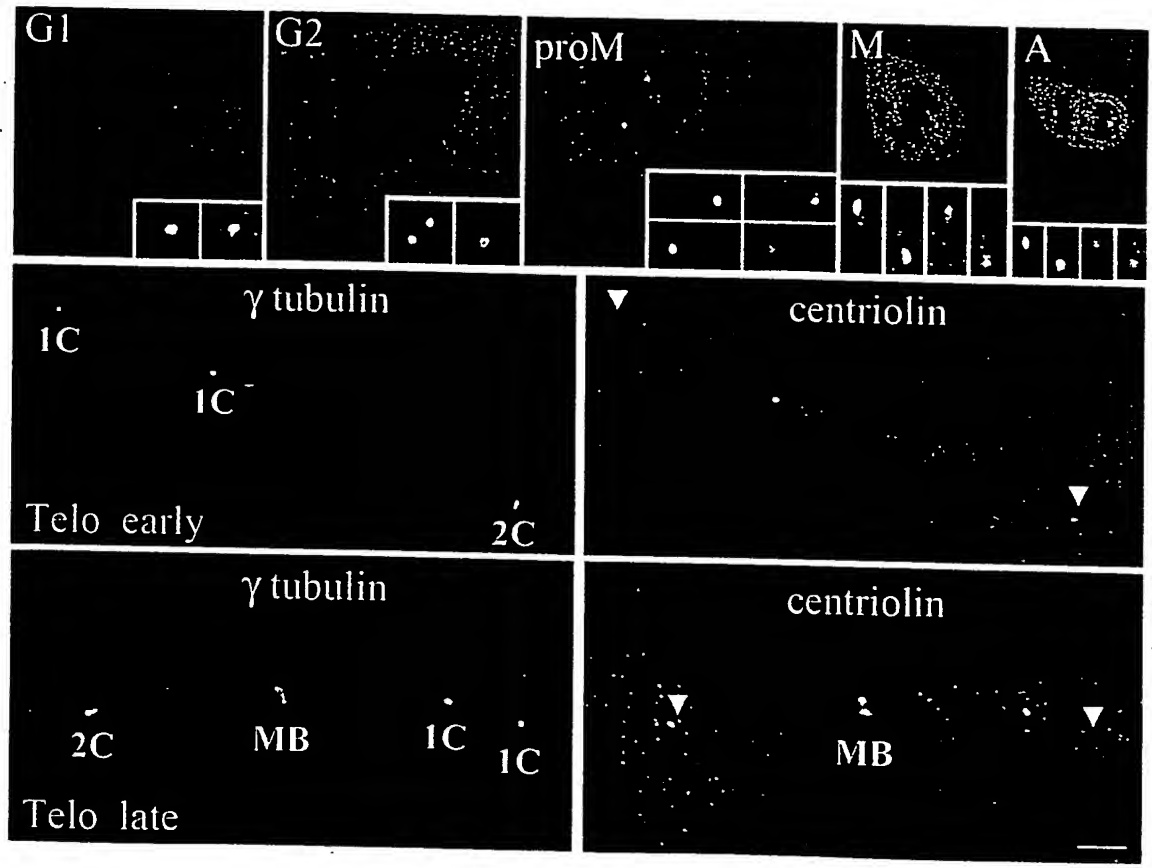

G1
G2
proM
M
A
γ tubulin
centriolin
1C
1C
Telo early
2C
γ tubulin
centriolin
2C
MB
1C
1C
MB
Telo late

FIG. 1SA FIG. 1SB FIG. 1SC FIG. 1SD

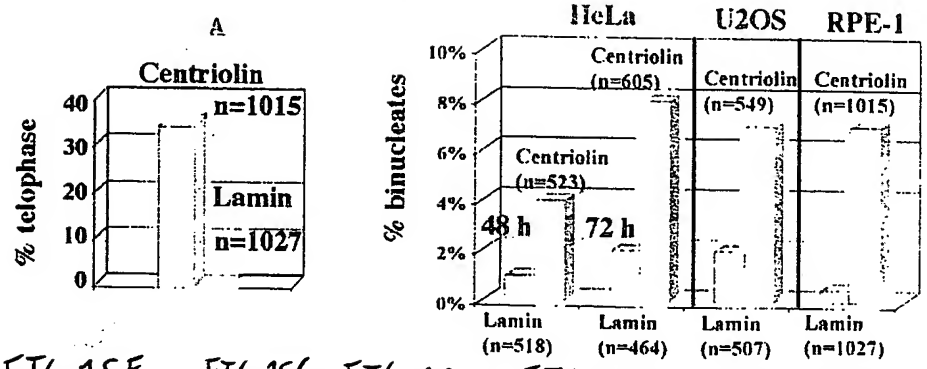


FIG. 1SE FIG. 1SG FIG. 1SI FIG. 1SK FIG. 1SM

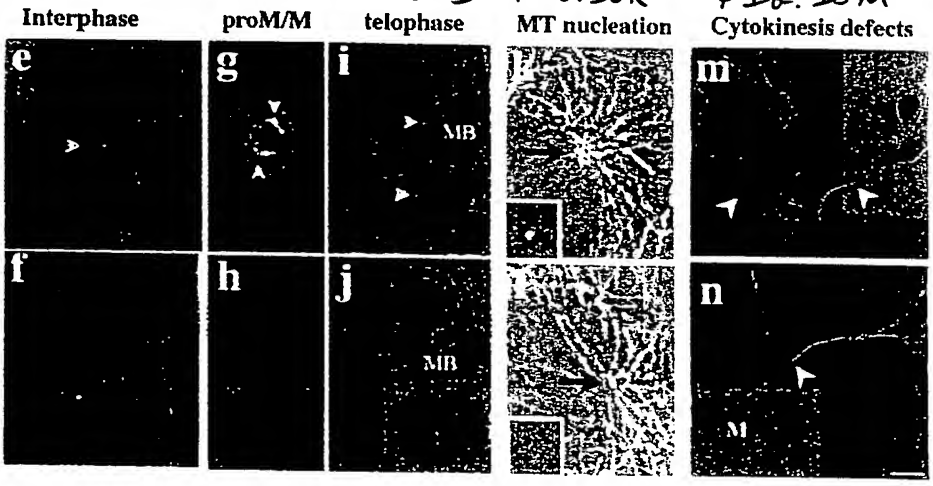


FIG. 1SF FIG. 1SH FIG 1SJ FIG. 1SL FIG. 1SN

FIG. 8A

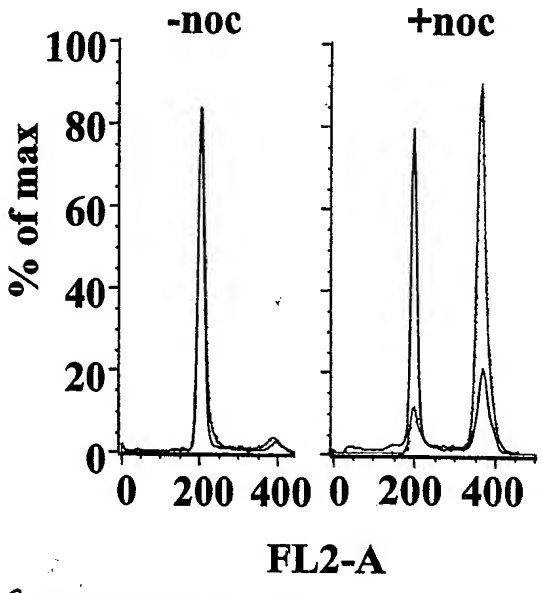


FIG. 8B

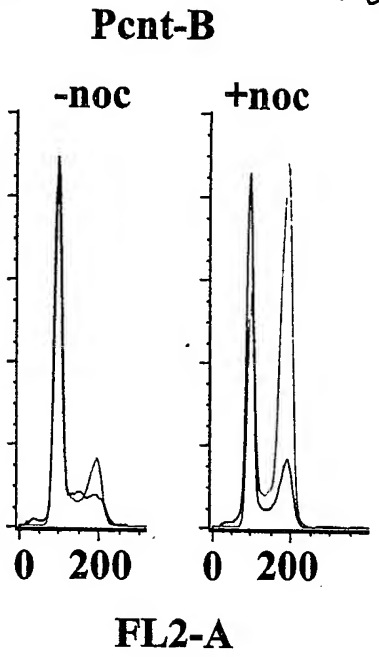


FIG. 8C

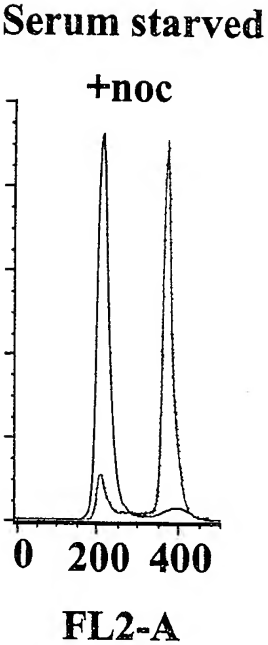


FIG. 8D

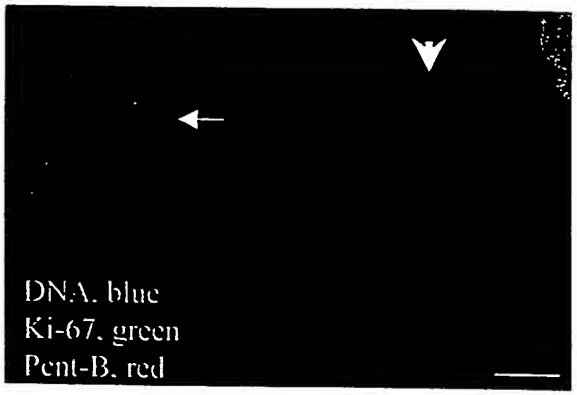


FIG. 8E

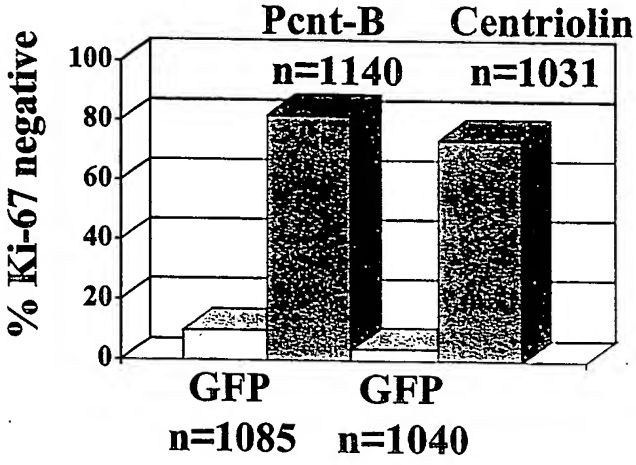


FIG. 8F

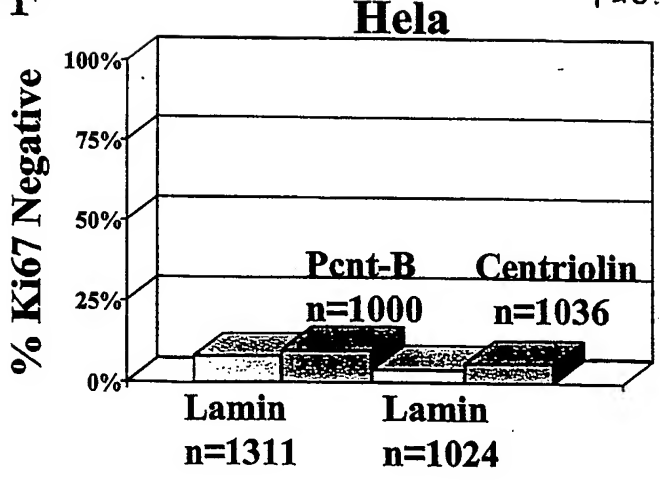
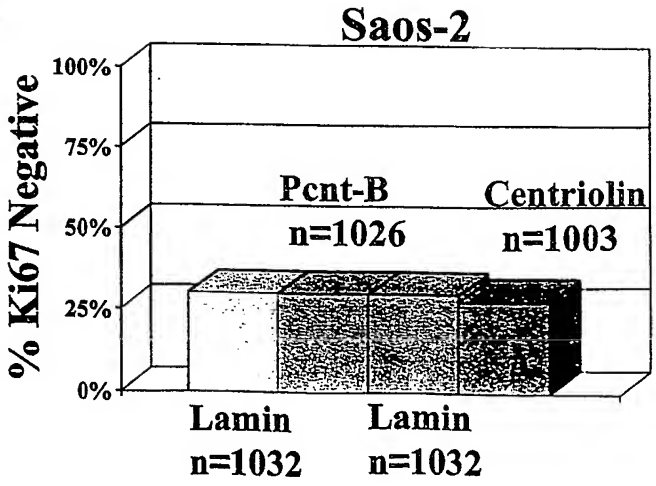


FIG. 8G



Without nocodazole

	% G1	% S	% G2
Centriolin	74	13	4
Lamin (control)	62	23	7
	% G1	**% S**	**% G2**
Pcnt-B	70	13	14
GFP (control)	46	35	19

With nocodazole

	% G1	% S	% G2
Centriolin	49	13	23
Lamin (control)	19	19	46
	% G1	**% S**	**% G2**
Pcnt-B	65	14	19
GFP (control)	24	15	60

Cell cycle analysis of flow cytometry data (Fig 8).

Figure 9

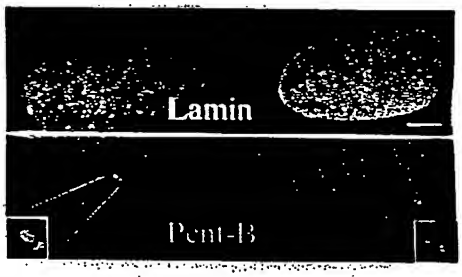


Figure 10

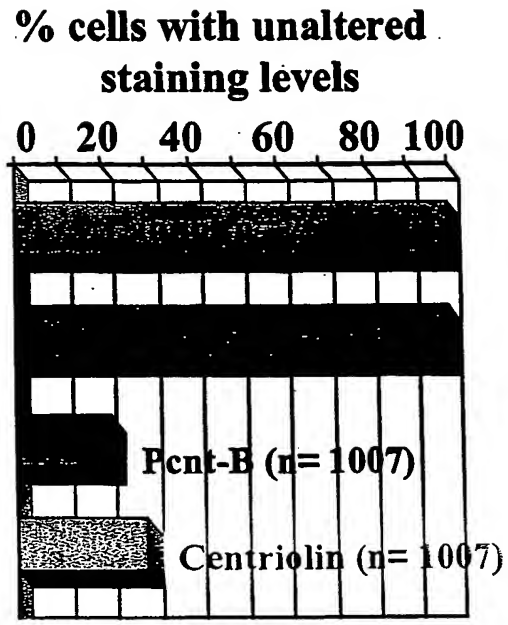

% cells with unaltered staining levels
0
20
40
60
80
100
Pcnt-B (n= 1007)
Centriolin (n= 1007)

Figure 11

FIG. 12A

```
1
atgaagaaaggttctcaacaaaaaatattctccaaagcaaagata
 M  K  K  G  S  Q  Q  K  I  F  S  K  A  K  I

46
ccatcatcatctcactctcctatcccatcatctatgtccaatatg
 P  S  S  S  H  S  P  I  P  S  S  M  S  N  M
91
agatctaggtcactttcacctttgattggatcagagactctacct
 R  S  R  S  L  S  P  L  I  G  S  E  T  L  P
136
tttcattctggaggacagtggtgtgagcaaattgagattgcagat
 F  H  S  G  G  Q  W  C  E  Q  I  E  I  A  D
181
gaaaacaatatgcttttggactatcaagaccataaaggagctgat
 E  N  N  M  L  L  D  Y  Q  D  H  K  G  A  D
226
tcacatgcaggagttagatatattacagaggccctcattaaaaaa
 S  H  A  G  V  R  Y  I  T  E  A  L  I  K  K
271
cttactaaacaggataatttggctttgataaaatctctgaaccttt
 L  T  K  Q  D  N  L  A  L  I  K  S  L  N  L
316
tcactttctaaagacggtggcaagaaatttaagtatattgagaat
 S  L  S  K  D  G  G  K  K  F  K  Y  I  E  N
361
ttggaaaaatgtgttaaacttgaagtactgaatctcagctataat
 L  E  K  C  V  K  L  E  V  L  N  L  S  Y  N
406
ctaatagggaagattgaaaagttggacaagctgttaaaattacgt
 L  I  G  K  I  E  K  L  D  K  L  L  K  L  R
451
gaactcaacttatcatataacaaaatcagcaaaattgaaggcata
 E  L  N  L  S  Y  N  K  I  S  K  I  E  G  I
496
gaaaatatgtgtaatctgcaaaagcttaaccttgcaggaaatgaa
 E  N  M  C  N  L  Q  K  L  N  L  A  G  N  E
541
attgagcatattccagtatggttagggaagaagttaaaatctttg
 I  E  H  I  P  V  W  L  G  K  K  L  K  S  L
586
cgagtcctcaatttgaaaggcaacaagatatcatcgctccaagat
 R  V  L  N  L  K  G  N  K  I  S  S  L  Q  D
631
ataagcaagttgaaaccgcttcaagatttgatttctctgatccta
 I  S  K  L  K  P  L  Q  D  L  I  S  L  I  L
676
gttgaaaatccagttgtgacccttcctcattacctccagtttacc
 V  E  N  P  V  V  T  L  P  H  Y  L  Q  F  T
721
attttccacctccgttcattggaaagtttggaaggtcagccagta
 I  F  H  L  R  S  L  E  S  L  E  G  Q  P  V
766
accactcaggatagacaggaggcttttgagagattcagtttagaa
 T  T  Q  D  R  Q  E  A  F  E  R  F  S  L  E
811
```

FIG. 12B

gaggtagaaagactggaaagagacctagaaaaaaagatgatagaa
E V E R L E R D L E K K M I E
856
actgaagagcttaagagcaaacaaacaaggttccttgaggaaatt
T E E L K S K Q T R F L E E I
901
aaaaatcaagataaattgaataaatcattaaaagaggaggccatg
K N Q D K L N K S L K E E A M
946
ttacagaaacagagctgtgaggaactcaagagtgacttaaacaca
L Q K Q S C E E L K S D L N T
991
aaaaatgaattgctaaaacagaagaccatagaattaacacgagca
K N E L L K Q K T I E L T R A
1036
tgtcagaagcaatatgagctggaacaggaattggccttttataaa
C Q K Q Y E L E Q E L A F Y K
1081
attgatgctaaatttgagccactaaattattatccatcagagtat
I D A K F E P L N Y Y P S E Y
1126
gctgaaattgataaagccccagatgaaagcccttacattggcaaa
A E I D K A P D E S P Y I G K
1171
tccagatacaagagaaatatgtttgccacagagagttatattatt
S R Y K R N M F A T E S Y I I
1216
gacagtgctcaggcagtacagatcaagaagatggagccagatgaa
D S A Q A V Q I K K M E P D E
1261
caacttagaaatgatcacatgaacttgagaggccacacaccactg
Q L R N D H M N L R G H T P L
1306
gacacgcaactggaagacaaagaaaaaaaaataagtgcagcacaa
D T Q L E D K E K K I S A A Q
1351
actcgactatcagaactgcatgatgaaatagaaaaggcagaacaa
T R L S E L H D E I E K A E Q
1396
caaattttgagagctactgaagaatttaaacaactggaagaagct
Q I L R A T E E F K Q L E E A
1441
atacaactaaaaaagatttcagaagcagggaaagaccttctttac
I Q L K K I S E A G K D L L Y
1486
aagcagttgagtggtagactacaacttgtaaataaattacgccag
K Q L S G R L Q L V N K L R Q
1531
gaagctctggatctagaactgcagatggaaaagcaaaagcaggaa
E A L D L E L Q M E K Q K Q E
1576
attgccggaaagcagaaggagattaaggacctgcaaatagccata
I A G K Q K E I K D L Q I A I
1621
gatagcctggattccaaagacccaaaacattcccatatgaaggct
D S L D S K D P K H S H M K A

FIG. 12C

```
1666
caaaagagcggtaaagaacaacagcttgacattatgaacaagcag
 Q  K  S  G  K  E  Q  Q  L  D  I  M  N  K  Q
1711
taccaacaacttgaaagtcgtttggatgagatactttctagaatt
 Y  Q  Q  L  E  S  R  L  D  E  I  L  S  R  I
1756
gctaaggaaacggaagagattaaggaccttgaagaacagcttact
 A  K  E  T  E  E  I  K  D  L  E  E  Q  L  T
1801
gaaggccagatagcagcaaatgaagccctgaagaaggatttagaa
 E  G  Q  I  A  A  N  E  A  L  K  K  D  L  E
1846
ggtgttatcagtgggttgcaagaatacctggggaccattaaaggc
 G  V  I  S  G  L  Q  E  Y  L  G  T  I  K  G
1891
caggcaactcaggcccagaatgagtgcaggaagctgcgggatgag
 Q  A  T  Q  A  Q  N  E  C  R  K  L  R  D  E
1936
aaagagacattgttgcagagattgacagaagtcgagcaggagaga
 K  E  T  L  L  Q  R  L  T  E  V  E  Q  E  R
1981
gaccagctggaaatagttgccatggatgcagaaaatatgaggaag
 D  Q  L  E  I  V  A  M  D  A  E  N  M  R  K
2026
gagcttgcagagctagaaagtgccctccaagagcagcatgaggtg
 E  L  A  E  L  E  S  A  L  Q  E  Q  H  E  V
2071
aatgcatctttgcagcagacccagggagatctcagtgcctatgaa
 N  A  S  L  Q  Q  T  Q  G  D  L  S  A  Y  E
2116
gctgagctagaggctcggctaaacctaagggatgctgaagccaac
 A  E  L  E  A  R  L  N  L  R  D  A  E  A  N
2161
cagctcaaggaagagttggaaaaagtaacaagacttacccagtta
 Q  L  K  E  E  L  E  K  V  T  R  L  T  Q  L
2206
gaacaatcagcccttcaagcagaacttgagaaggaaaggcaagcc
 E  Q  S  A  L  Q  A  E  L  E  K  E  R  Q  A
2251
ctcaagaatgcccttggaaaagcccagttctcagaagaaaaggag
 L  K  N  A  L  G  K  A  Q  F  S  E  E  K  E
2296
caagagaacagtgagctccatgcaaaacttaaacacttgcaggat
 Q  E  N  S  E  L  H  A  K  L  K  H  L  Q  D
2341
gacaataatctgttaaaacagcaacttaaagatttccagaatcac
 D  N  N  L  L  K  Q  Q  L  K  D  F  Q  N  H
2386
cttaaccatgtggttgatggtttggttcgtccagaagaagtggca
 L  N  H  V  V  D  G  L  V  R  P  E  E  V  A
2431
gctcgtgtggatgagctaagaagaaaactgaaattaggaactggg
 A  R  V  D  E  L  R  R  K  L  K  L  G  T  G
2476
gaaatgaacatccatagtccttcagatgtcttagggaaaagtctt
```

FIG. 12D

```
 E  M  N  I  H  S  P  S  D  V  L  G  K  S  L
2521
gctgatttacagaaacaattcagtgaaattcttgcacgctccaag
 A  D  L  Q  K  Q  F  S  E  I  L  A  R  S  K
2566
tgggaaagagatgaagcacaagttagagagagaaaactccaagaa
 W  E  R  D  E  A  Q  V  R  E  R  K  L  Q  E
2611
gaaatggctctgcagcaagagaaactggcaactggacaagaagag
 E  M  A  L  Q  Q  E  K  L  A  T  G  Q  E  E
2656
ttcaggcaggcctgtgagagagccctggaagcaagaatgaatttt
 F  R  Q  A  C  E  R  A  L  E  A  R  M  N  F
2701
gataagaggcaacatgaagcaagaatccagcaaatggagaatgaa
 D  K  R  Q  H  E  A  R  I  Q  Q  M  E  N  E
2746
attcactatttgcaagaaaatctaaaaagtatggaggaaatccaa
 I  H  Y  L  Q  E  N  L  K  S  M  E  E  I  Q
2791
ggccttacagatctccaacttcaggaagctgatgaagagaaggag
 G  L  T  D  L  Q  L  Q  E  A  D  E  E  K  E
2836
agaattctggcccaactccgagagttagagaaaaagaagaaactt
 R  I  L  A  Q  L  R  E  L  E  K  K  K  K  L
2881
gaagatgccaaatctcaggagcaagtttttggtttagataaagaa
 E  D  A  K  S  Q  E  Q  V  F  G  L  D  K  E
2926
ctgaagaaactaaagaaagccgtggccacctctgataagctagcc
 L  K  K  L  K  K  A  V  A  T  S  D  K  L  A
2971
acagctgagctcaccattgccaaagaccagctgaagtcccttcat
 T  A  E  L  T  I  A  K  D  Q  L  K  S  L  H
3016
ggaactgttatgaaaattaaccaggagcgagcagaggagttgcag
 G  T  V  M  K  I  N  Q  E  R  A  E  E  L  Q
   3061
gaagcagagaggttcagcagaaaggcagcacaagcagccagagat
 E  A  E  R  F  S  R  K  A  A  Q  A  A  R  D
3106
ctcacccgagcagaagctgagatcgaactcctgcagaatctcctc
 L  T  R  A  E  A  E  I  E  L  L  Q  N  L  L
3151
aggcagaaggggagcagtttcgacttgagatggagaaaacaggt
 R  Q  K  G  E  Q  F  R  L  E  M  E  K  T  G
3196
gtaggtactggagcaaactcacaggtcctagaaattgagaaactg
 V  G  T  G  A  N  S  Q  V  L  E  I  E  K  L
3241
aatgagacaatggaacgacaaaggacagagattgcaaggctgcag
 N  E  T  M  E  R  Q  R  T  E  I  A  R  L  Q
3286
aatgtactagacctcactggaagtgacaacaaaggaggctttgaa
 N  V  L  D  L  T  G  S  D  N  K  G  G  F  E
3331
```

FIG. 12E

```
aatgttttagaagaaattgctgaacttcgacgtgaagtttcttat
 N  V  L  E  E  I  A  E  L  R  R  E  V  S  Y
3376
cagaatgattacataagcagcatggcagatcctttcaaaagacga
 Q  N  D  Y  I  S  S  M  A  D  P  F  K  R  R
3421
ggctattggtactttatgccaccaccaccatcatcaaaagtttcc
 G  Y  W  Y  F  M  P  P  P  P  S  S  K  V  S
3466
agccatagttcccaggccaccaaggactctggtgttggccttaag
 S  H  S  S  Q  A  T  K  D  S  G  V  G  L  K
3511
tactcagcctcaactcctgttagaaaaccacgccctgggcagcag
 Y  S  A  S  T  P  V  R  K  P  R  P  G  Q  Q
3556
gatgggaaggaaggcagtcaacctccccctgcctcaggatactgg
 D  G  K  E  G  S  Q  P  P  P  A  S  G  Y  W
3601
gtttattctcccatcaggagtgggttacataaactgtttccaagt
 V  Y  S  P  I  R  S  G  L  H  K  L  F  P  S
3646
agagatgcagacagtggaggagatagtcaggaagagagtgagctg
 R  D  A  D  S  G  G  D  S  Q  E  E  S  E  L
3691
gatgaccaagaagaacccccatttgtgcctcctcctggatacatg
 D  D  Q  E  E  P  P  F  V  P  P  P  G  Y  M
3736
atgtatactgtgcttcctgatggttctcctgtaccccagggcatg
 M  Y  T  V  L  P  D  G  S  P  V  P  Q  G  M
3781
gccctgtatgcaccacctcctcccttgccaaacaatagccgacct
 A  L  Y  A  P  P  P  P  L  P  N  N  S  R  P
3826
ctcacccctggcactgttgtttatggcccacctcctgctggggcc
 L  T  P  G  T  V  V  Y  G  P  P  P  A  G  A
3871
cccatggtgtatgggcctccacccccaacttctccatccccttc
 P  M  V  Y  G  P  P  P  P  N  F  S  I  P  F
3916
atccctatgggtgtgctgcattgcaacgtccctgaacaccataac
 I  P  M  G  V  L  H  C  N  V  P  E  H  H  N
3961
ttagagaatgaagtttctagattagaagacataatgcagcattta
 L  E  N  E  V  S  R  L  E  D  I  M  Q  H  L
4006
aaatcaaagaagcgggaagaaaggtggatgagagcatccaagcgg
 K  S  K  K  R  E  E  R  W  M  R  A  S  K  R
4051
cagtcggagaaagaaatggaagaactgcatcataatattgatgat
 Q  S  E  K  E  M  E  E  L  H  H  N  I  D  D
4096
cttttgcaagagaagaaaagcttagagtgtgaagtagaagaatta
 L  L  Q  E  K  K  S  L  E  C  E  V  E  E  L
4141
catagaactgtccagaaacgtcaacagcaaaaggacttcattgat
 H  R  T  V  Q  K  R  Q  Q  Q  K  D  F  I  D
```

FIG. 12F

4186
ggaaatgttgagagtcttatgactgaactagaaatagaaaaatca
G N V E S L M T E L E I E K S
4231
ctcaaacatcatgaagatattgtagatgaaattgagtgcattgag
L K H H E D I V D E I E C I E
4276
aagactcttctgaaacgtcgctcagagctcagggaagctgaccga
K T L L K R R S E L R E A D R
4321
ctcctggcagaggctgagagtgaactttcatgcactaaagaaaag
L L A E A E S E L S C T K E K
4366
acaaaaaatgctgttgaaaagttcactgatgccaagagaagttta
T K N A V E K F T D A K R S L
4411
ttgcaaactgagtcagatgctgaggaattagaaaggagagctcag
L Q T E S D A E E L E R R A Q
4456
gaaactgctgttaacctcgtcaaagctgatcagcagctaagatcg
E T A V N L V K A D Q Q L R S
4501
ctccaggctgatgcaaaggatttggagcagcacaaaatcaagcaa
L Q A D A K D L E Q H K I K Q
4546
gaagaaatcttgaaagaaataaacaaaattgtagcagcaaaagac
E E I L K E I N K I V A A K D
4591
tcagacttccaatgtttaagcaagaagaaggaaaaactgacagaa
S D F Q C L S K K K E K L T E
4636
gagcttcagaaactacagaaagacatagagatggcagaacgcaat
E L Q K L Q K D I E M A E R N
4681
gaggatcaccacctgcaggtccttaaagaatctgaggtgcttctt
E D H H L Q V L K E S E V L L
4726
caggccaaaagagccgagctggaaaagctgaaaagccaggtgaca
Q A K R A E L E K L K S Q V T
4771
agtcagcagcaggagatggctgtcttggacaggcagttagggcat
S Q Q Q E M A V L D R Q L G H
4816
aaaaaggaggagctgcatctactccaaggaagcatggtccaggca
K K E E L H L L Q G S M V Q A
4861
aaagctgacctccaggaagctctgagactgggagagactgaagta
K A D L Q E A L R L G E T E V
4906
actgagaagtgcaatcacattagggaagtaaaatctcttctggaa
T E K C N H I R E V K S L L E
4951
gaactgagttttcagaaaggagaactaaatgttcagattagtgaa
E L S F Q K G E L N V Q I S E
4996
agaaaaactcaacttacacttataaagcaggaaattgaaaaagag

FIG. 12G

```
 R  K  T  Q  L  T  L  I  K  Q  E  I  E  K  E
5041
gaagaaaatcttcaggttgttttaaggcagatgtctaaacataaa
 E  E  N  L  Q  V  V  L  R  Q  M  S  K  H  K
5086
accgaactaaagaatattctggacatgttgcaacttgaaaaccat
 T  E  L  K  N  I  L  D  M  L  Q  L  E  N  H
5131
gagctacaaggtttgaagctacaacatgaccaaagggtatctgaa
 E  L  Q  G  L  K  L  Q  H  D  Q  R  V  S  E
5176
ttagagaagactcaggtggcagtgctagaggagaaactggagtta
 L  E  K  T  Q  V  A  V  L  E  E  K  L  E  L
5221
gagaatttgcagcagatatcccagcagcagaaaggggaaatagag
 E  N  L  Q  Q  I  S  Q  Q  Q  K  G  E  I  E
5266
tggcagaagcagctccttgagagggataaacgagaaatagaacga
 W  Q  K  Q  L  L  E  R  D  K  R  E  I  E  R
5311
atgactgctgagtcccgagctttacaatcgtgtgttgagtgtttg
 M  T  A  E  S  R  A  L  Q  S  C  V  E  C  L
5356
agcaaagaaaaggaagatctccaagagaaatgtgacatttgggaa
 S  K  E  K  E  D  L  Q  E  K  C  D  I  W  E
5401
aaaaagttggcacaaaccaaaagggttttagcagcagcagaagaa
 K  K  L  A  Q  T  K  R  V  L  A  A  A  E  E
5446
aatagcaaaatggagcaatcaaacttagaaaagttggaattgaat
 N  S  K  M  E  Q  S  N  L  E  K  L  E  L  N
5491
gtcagaaaactgcagcaggaactagaccaactaaacagagacaag
 V  R  K  L  Q  Q  E  L  D  Q  L  N  R  D  K
5536
ttgtcactgcataacgacatttcagcaatgcaacagcagctccaa
 L  S  L  H  N  D  I  S  A  M  Q  Q  Q  L  Q
5581
gaaaaacgagaagcagtaaactcactgcaggaggaactagctaat
 E  K  R  E  A  V  N  S  L  Q  E  E  L  A  N
5626
gtccaagaccatttgaacctagcaaaacaggacctgcttcacacc
 V  Q  D  H  L  N  L  A  K  Q  D  L  L  H  T
5671
accaagcatcaggatgtgttgctcagtgagcagacccgactccag
 T  K  H  Q  D  V  L  L  S  E  Q  T  R  L  Q
5716
aaggacatcagtgaatgggcaaataggtttgaagactgtcagaaa
 K  D  I  S  E  W  A  N  R  F  E  D  C  Q  K
5761
gaagaggagacaaaacaacaacaacttcaagtgcttcagaatgag
 E  E  E  T  K  Q  Q  Q  L  Q  V  L  Q  N  E
5806
attgaagaaaacaagctcaaactagtccaacaagaaatgatgttt
 I  E  E  N  K  L  K  L  V  Q  Q  E  M  M  F
5851
```

FIG. 12H

```
cagagactccagaaagagagagaaagtgaagaaagcaaattagaa
 Q  R  L  Q  K  E  R  E  S  E  E  S  K  L  E
5896
accagtaaagtgacactgaaggagcaacagcaccagctggaaaag
 T  S  K  V  T  L  K  E  Q  Q  H  Q  L  E  K
5941
gaattaacagaccagaaaagcaaactggaccaagtgctctcaaag
 E  L  T  D  Q  K  S  K  L  D  Q  V  L  S  K
5986
gtgctggcagctgaagagcgtgttaggactctgcaggaagaggag
 V  L  A  A  E  E  R  V  R  T  L  Q  E  E  E
6031
aggtggtgtgagagcctggagaagacactctcccaaactaaacgg
 R  W  C  E  S  L  E  K  T  L  S  Q  T  K  R
6076
cagctttcagaaagggagcagcaattggtggagaaatcaggtgag
 Q  L  S  E  R  E  Q  Q  L  V  E  K  S  G  E
6121
ctgttggccctccagaaagaggcagattctatgagggcagacttc
 L  L  A  L  Q  K  E  A  D  S  M  R  A  D  F
6166
agccttctgcggaaccagttcttgacagaaagaaagaaagctgag
 S  L  L  R  N  Q  F  L  T  E  R  K  K  A  E
6211
aagcaggtggccagcctgaaggaagcacttaagatccagcggagc
 K  Q  V  A  S  L  K  E  A  L  K  I  Q  R  S
6256
cagctggagaaaaaccttcttgagcaaaaacaggagaacagctgc
 Q  L  E  K  N  L  L  E  Q  K  Q  E  N  S  C
6301
atacaaaaggaaatggcaacaattgaactggtagcccaggacaac
 I  Q  K  E  M  A  T  I  E  L  V  A  Q  D  N
6346
catgagcgggccaggcgcctgatgaaggagctcaaccagatgcag
 H  E  R  A  R  R  L  M  K  E  L  N  Q  M  Q
6391
tatgagtacacggagctcaagaaacagatggcaaaccaaaaagat
 Y  E  Y  T  E  L  K  K  Q  M  A  N  Q  K  D
   6436
ttggagagaagacaaatggaaatcagtgatgcaatgaggacactt
 L  E  R  R  Q  M  E  I  S  D  A  M  R  T  L
6481
aaatctgaggtgaaggatgaaatcagaaccagcttgaagaatctt
 K  S  E  V  K  D  E  I  R  T  S  L  K  N  L
6526
aatcagtttcttccagaactaccagcagatctagaagctattttg
 N  Q  F  L  P  E  L  P  A  D  L  E  A  I  L
6571
gaaagaaacgaaaacctagaaggagaattggaaagcttgaaagag
 E  R  N  E  N  L  E  G  E  L  E  S  L  K  E
6616
aaccttccatttaccatgaatgagggacctttgaagaaaaactg
 N  L  P  F  T  M  N  E  G  P  F  E  E  K  L
6661
aacttttcccaagttcacataatggatgaacactggcgtggagaa
 N  F  S  Q  V  H  I  M  D  E  H  W  R  G  E
```

FIG. 12I

```
6706
gcactccgggagaaactgcgtcaccgggaagaccgactcaaggcc
 A  L  R  E  K  L  R  H  R  E  D  R  L  K  A
6751
caactccgacactgtatgtccaagcaagcagaagtattaattaaa
 Q  L  R  H  C  M  S  K  Q  A  E  V  L  I  K
6796
ggaaagcggcagacagagggcactttacacagtttgaggagacaa
 G  K  R  Q  T  E  G  T  L  H  S  L  R  R  Q
6841
gtagatgctttaggggaattggtcaccagcacctctgcagattca
 V  D  A  L  G  E  L  V  T  S  T  S  A  D  S
6886
gcgtcatcacccagtctgtctcagctggagtcttccctcacagag
 A  S  S  P  S  L  S  Q  L  E  S  S  L  T  E
6931
gactctcaacttggacaaaatcaggaaaagaatgcctcagccaga (SEQ ID NO:1)
 D  S  Q  L  G  Q  N  Q  E  K  N  A  S  A  R (SEQ ID NO:2)
6976 tga 6978
```

FIG. 13A

```
   1 atggaagttgagcaagagcagcggcgcagaaaggtggaggccggg
     M  E  V  E  Q  E  Q  R  R  R  K  V  E  A  G
  46 aggacgaagcttgctcacttccgacagagaaaaacaaaaggtgac
     R  T  K  L  A  H  F  R  Q  R  K  T  K  G  D
  91 agttcgcattcggagaaaaagacggcgaagaggaagggctcggct
     S  S  H  S  E  K  K  T  A  K  R  K  G  S  A
 136 gtcgatgcgtctgtccaggaggagagtccggtaaccaaggaggac
     V  D  A  S  V  Q  E  E  S  P  V  T  K  E  D
 181 agcgcactctgtggaggaggggacatttgcaaaagcacatcatgt
     S  A  L  C  G  G  G  D  I  C  K  S  T  S  C
 226 gacgacacccctgatggggcaggaggggcctttgcagctcagccg
     D  D  T  P  D  G  A  G  G  A  F  A  A  Q  P
 271 gaggactgtgatggagagaagagagaggacttggaacagctgcag
     E  D  C  D  G  E  K  R  E  D  L  E  Q  L  Q
 316 cagaagcaagtcaatgaccatcctccagagcagtgtgggatgttc
     Q  K  Q  V  N  D  H  P  P  E  Q  C  G  M  F
 361 acagtcagtgaccacccaccagaacagcatgggatgttcacagtc
     T  V  S  D  H  P  P  E  Q  H  G  M  F  T  V
 406 ggtgaccacccaccagaacagcgtgggatgttcacagtcagtgac
     G  D  H  P  P  E  Q  R  G  M  F  T  V  S  D
 451 cacccaccagaacagcatgggatgttcacagtcagtgaccaccca
     H  P  P  E  Q  H  G  M  F  T  V  S  D  H  P
 496 ccagaacagcgtgggatgttcacaatcagtgaccaccaaccggaa
     P  E  Q  R  G  M  F  T  I  S  D  H  Q  P  E
 541 cagcgtgggatgttcacagtcagtgaccacacaccagaacagcgt
     Q  R  G  M  F  T  V  S  D  H  T  P  E  Q  R
 586 gggatcttcacaatcagtgaccacccagcagaacagcgtgggatg
     G  I  F  T  I  S  D  H  P  A  E  Q  R  G  M
 631 ttcacaaaggagtgtgaacaagaatgtgaacttgccattactgac
     F  T  K  E  C  E  Q  E  C  E  L  A  I  T  D
 676 ctggagagcggccgtgaagatgaggctggcctgcatcagagtcag
     L  E  S  G  R  E  D  E  A  G  L  H  Q  S  Q
 721 gccgtgcatggccttgagctggaggcgctgcgcctgagtctgagc
     A  V  H  G  L  E  L  E  A  L  R  L  S  L  S
 766 aacatgcacacggcgcagctggagctgacacaggccaacctccag
     N  M  H  T  A  Q  L  E  L  T  Q  A  N  L  Q
 811 aaggagaaggagacggcattgacggagctgcgggagatgctcaac
     K  E  K  E  T  A  L  T  E  L  R  E  M  L  N
 856 agccggcgtgcccaggagctggccctgctacagagcaggcagcag
     S  R  R  A  Q  E  L  A  L  L  Q  S  R  Q  Q
 901 cacgagctggagctcctcagggagcagcacgcacgggagaaggag
     H  E  L  E  L  L  R  E  Q  H  A  R  E  K  E
 946 gaggtggtgctcaggtgtggacaggaagcagctgagctgaaggag
     E  V  V  L  R  C  G  Q  E  A  A  E  L  K  E
 991 aagttacaatcagaaatggagaaaaacgcccagatagtaaagacc
     K  L  Q  S  E  M  E  K  N  A  Q  I  V  K  T
1036 ctgaaggaagattgggaatctgaaaaagatttatgtttagaaaat
     L  K  E  D  W  E  S  E  K  D  L  C  L  E  N
1081 ctacgcaaagaactgtctgcaaagcatcaatcagaaatggaggat
     L  R  K  E  L  S  A  K  H  Q  S  E  M  E  D
1126 ttacaaaaccagtttcagaaagaattggcagaacagagagctgag
     L  Q  N  Q  F  Q  K  E  L  A  E  Q  R  A  E
1171 ttggagaagatttttcaagacaaaaaccaggctgaacgggccctt
     L  E  K  I  F  Q  D  K  N  Q  A  E  R  A  L
1216 aggaacctggagagtcatcatcaagcagccattgagaagttacgt
     R  N  L  E  S  H  H  Q  A  A  I  E  K  L  R
```

FIG. 13B

```
1261 gaagacctgcagtccgagcacggccggtgtttagaagacttggag
      E  D  L  Q  S  E  H  G  R  C  L  E  D  L  E
1306 ttcaagttcaaagagagcgagaaagaaaaacagctggagttagag
      F  K  F  K  E  S  E  K  E  K  Q  L  E  L  E
1351 aatcttcaagcatcatatgaagacctgaaggcacaatcacaagaa
      N  L  Q  A  S  Y  E  D  L  K  A  Q  S  Q  E
1396 gagatcaggcgcttgtggtcccagcttgattctgccaggaccagt
      E  I  R  R  L  W  S  Q  L  D  S  A  R  T  S
1441 agacaggaattgagtgagctacatgagcaactcctggcgcgcacc
      R  Q  E  L  S  E  L  H  E  Q  L  L  A  R  T
1486 tctcgtgtggaagatttagaacagctgaagcagcgagaaaaaacc
      S  R  V  E  D  L  E  Q  L  K  Q  R  E  K  T
1531 cagcatgagtccgaactggagcaactgaggatttattttgaaaag
      Q  H  E  S  E  L  E  Q  L  R  I  Y  F  E  K
1576 aagttaagggatgctgagaaaacttaccaagaagacctaaccctg
      K  L  R  D  A  E  K  T  Y  Q  E  D  L  T  L
1621 ttacagcagaggctgcagggggcgagggaagatgctcttctggac
      L  Q  Q  R  L  Q  G  A  R  E  D  A  L  L  D
1666 tctgtggaagttgggttgtcctgtgtgggtttagaagagaaacct
      S  V  E  V  G  L  S  C  V  G  L  E  E  K  P
1711 gagaaaggaagaaaagatcacgttgatgaactcgagcctgagcga
      E  K  G  R  K  D  H  V  D  E  L  E  P  E  R
1756 cataaggagagcctgccacgcttccaggcggagttagaagaaagc
      H  K  E  S  L  P  R  F  Q  A  E  L  E  E  S
1801 cacaggcaccagctggaagcgctggagtctcccctctgcatccag
      H  R  H  Q  L  E  A  L  E  S  P  L  C  I  Q
1846 cacgaggggcatgtctcagacagatgctgcgtagagacttcagca
      H  E  G  H  V  S  D  R  C  C  V  E  T  S  A
1891 ttgggacacgagtggcgtctggaaccctctgaagggcacagccaa
      L  G  H  E  W  R  L  E  P  S  E  G  H  S  Q
1936 gagcttccctgggtgcatctccagggtgtgcaggacggggacttg
      E  L  P  W  V  H  L  Q  G  V  Q  D  G  D  L
1981 gaggccgacacagagcgggcagccagagtcttgggtctggaaact
      E  A  D  T  E  R  A  A  R  V  L  G  L  E  T
2026 gagcacaaggtgcaactttcgcttcttcagactgagctcaaagaa
      E  H  K  V  Q  L  S  L  L  Q  T  E  L  K  E
2071 gaaattgaactcctaaaaatagaaaatagaaatttgtatgagaag
      E  I  E  L  L  K  I  E  N  R  N  L  Y  E  K
2116 ttgcagcatgaaactcgtctgaaggacgatttggagaaggtaaaa
      L  Q  H  E  T  R  L  K  D  D  L  E  K  V  K
2161 cacaatctaattgaagaccaccagaaggaactaaataatgctaag
      H  N  L  I  E  D  H  Q  K  E  L  N  N  A  K
2206 caaaagactgagctgatgaaacaggaattccaaagaaaagaaacg
      Q  K  T  E  L  M  K  Q  E  F  Q  R  K  E  T
2251 gactggaaagttatgaaggaggagctacagcgggaagctgaggag
      D  W  K  V  M  K  E  E  L  Q  R  E  A  E  E
2296 aagttaacattgatgctacttgaactgagagaaaaggctgaatcc
      K  L  T  L  M  L  L  E  L  R  E  K  A  E  S
2341 gagaaacagaccatcataaacaagtttgagcttcgagaagctgaa
      E  K  Q  T  I  I  N  K  F  E  L  R  E  A  E
2386 atgaggcagcttcaggaccaacaggcagcccagatcctggatctg
      M  R  Q  L  Q  D  Q  Q  A  A  Q  I  L  D  L
2431 gagaggtccttgacggagcagcagggccgcctgcagcagctggaa
      E  R  S  L  T  E  Q  Q  G  R  L  Q  Q  L  E
2476 caggacctcacttcagacgacgccctgcattgcagccagtgtggg
      Q  D  L  T  S  D  D  A  L  H  C  S  Q  C  G
```

FIG. 13C

```
2521 cgggagccgcccacagcccaggacggggagcttgccgcgctccac
      R  E  P  P  T  A  Q  D  G  E  L  A  A  L  H
2566 gtgaaggaagactgcgccctgcagctgatgctggcccggagcagg
      V  K  E  D  C  A  L  Q  L  M  L  A  R  S  R
2611 tttttagaggaacgtaaagagatcaccgagaaattcagtgcggaa
      F  L  E  E  R  K  E  I  T  E  K  F  S  A  E
2656 caagatgccttcctgcaggaggcccaggagcagcatgcccgtgag
      Q  D  A  F  L  Q  E  A  Q  E  Q  H  A  R  E
2701 ctgcagctcctccaggagagacaccagcagcagctcctgtcagtg
      L  Q  L  L  Q  E  R  H  Q  Q  Q  L  L  S  V
2746 acggcggagctcgaggccagacaccaggccgcgttgggcgagctg
      T  A  E  L  E  A  R  H  Q  A  A  L  G  E  L
2791 acagcctccttagagagcaagcaggggctctgctggctgcacgt
      T  A  S  L  E  S  K  Q  G  A  L  L  A  A  R
2836 gtggccgaactgcagacaaaacacgctgccgacctcggcgctctg
      V  A  E  L  Q  T  K  H  A  A  D  L  G  A  L
2881 gagaccagacatctgtccagccttgattctttggaatcctgttac
      E  T  R  H  L  S  S  L  D  S  L  E  S  C  Y
2926 ctctctgaatttcagaccatccgtgaggagcacaggcaggcccta
      L  S  E  F  Q  T  I  R  E  E  H  R  Q  A  L
2971 gagctcttacgagcagactttgaggaacaactgtggaaaaaggac
      E  L  L  R  A  D  F  E  E  Q  L  W  K  K  D
3016 tctcttcaccaaacgattttgactcaagagttggagaaactgaag
      S  L  H  Q  T  I  L  T  Q  E  L  E  K  L  K
3061 cggaaacacgaaggggagctacagtctgtgcgggaccacctgcga
      R  K  H  E  G  E  L  Q  S  V  R  D  H  L  R
3106 accgaagtgagcacagagctcgccggaaccgtggctcacgagctg
      T  E  V  S  T  E  L  A  G  T  V  A  H  E  L
3151 cagggagtgcaccagggtgaatttggaagtgaaaagaaaactgct
      Q  G  V  H  Q  G  E  F  G  S  E  K  K  T  A
3196 ttgcatgaaaaagaggagacacttcggcttcagagtgcacaggca
      L  H  E  K  E  E  T  L  R  L  Q  S  A  Q  A
3241 cagcctttcaccaagaggagaaagagtctttgtctctgcagctt
      Q  P  F  H  Q  E  E  K  E  S  L  S  L  Q  L
3286 caaaagaagaatcaccaagtccagcagctgaaagaccaggtttta
      Q  K  K  N  H  Q  V  Q  Q  L  K  D  Q  V  L
3331 tccttaagtcacgagatagaagagtgccgctccgagttggaggtg
      S  L  S  H  E  I  E  E  C  R  S  E  L  E  V
3376 ctgcagcagaggcgggagcgggagaaccgggaaggcgcaaacctc
      L  Q  Q  R  R  E  R  E  N  R  E  G  A  N  L
3421 ctctccatgctcaaggccgacgtcaacctgtcccacagcgaaaga
      L  S  M  L  K  A  D  V  N  L  S  H  S  E  R
3466 ggggccctccaggacgccctgcgcaggctgctgggtttgtttgga
      G  A  L  Q  D  A  L  R  R  L  L  G  L  F  G
3511 gagacgctgagggcagccgtcaccctgaggagccggatcggggag
      E  T  L  R  A  A  V  T  L  R  S  R  I  G  E
3556 cgcgtggggctctgcctggatgacgcgggcgcaggcctggccctg
      R  V  G  L  C  L  D  D  A  G  A  G  L  A  L
3601 tcgacagctccggcgctggaggagacatggtctgatgtggccctc
      S  T  A  P  A  L  E  E  T  W  S  D  V  A  L
3646 ccggagttggacagaactttgtctgaatgtgcagagatgtcttcc
      P  E  L  D  R  T  L  S  E  C  A  E  M  S  S
3691 gtggctgaaattagcagccacatgcgtgaaagctttctcatgagc
      V  A  E  I  S  S  H  M  R  E  S  F  L  M  S
3736 ccagaaagtgtgcgggagtgtgagcagcccatccggagggtcttc
      P  E  S  V  R  E  C  E  Q  P  I  R  R  V  F
```

FIG. 13 D

```
3781 cagagcctcagcctggccgtggacggcctcatggagatggccctg
      Q  S  L  S  L  A  V  D  G  L  M  E  M  A  L
3826 gactccagcaggcagctggaagaagcacgccaaattcattctcgt
      D  S  S  R  Q  L  E  E  A  R  Q  I  H  S  R
3871 tttgaaaaagaatttagttttaagaatgaggagacagcacaggtt
      F  E  K  E  F  S  F  K  N  E  E  T  A  Q  V
3916 gtcaggaagcaccaggagctgctggagtgtttgaaggaggagagc
      V  R  K  H  Q  E  L  L  E  C  L  K  E  E  S
3961 gcagcaaaggcagagctggcgctggagctgcacaagactcagggt
      A  A  K  A  E  L  A  L  E  L  H  K  T  Q  G
4006 acccttgagggattcaaggtggagacagcagatctgaaggaggtg
      T  L  E  G  F  K  V  E  T  A  D  L  K  E  V
4051 ctggccgggaaggaggattccgagcaccgtctggtgctggagctg
      L  A  G  K  E  D  S  E  H  R  L  V  L  E  L
4096 gagagcctgagacggcagctgcagcaggcggcccaggagcaggcg
      E  S  L  R  R  Q  L  Q  Q  A  A  Q  E  Q  A
4141 gcgctgagggaggagtgcacccgtctgtggagtcgggggggaggcc
      A  L  R  E  E  C  T  R  L  W  S  R  G  E  A
4186 acagccacggacgccgaggccagagaagctgctctccggaaggaa
      T  A  T  D  A  E  A  R  E  A  A  L  R  K  E
4231 gtggaggatctgaccaaagaacagtcggagaccaggaagcaggct
      V  E  D  L  T  K  E  Q  S  E  T  R  K  Q  A
4276 gagaaggaccgctcagccctgctctcccagatgaagattttggag
      E  K  D  R  S  A  L  L  S  Q  M  K  I  L  E
4321 tctgagttagaagaacagctgtctcagcatcgcgggtgtgccaag
      S  E  L  E  E  Q  L  S  Q  H  R  G  C  A  K
4366 caggcggaggccgtcactgccctggaacagcaggtggcatctctg
      Q  A  E  A  V  T  A  L  E  Q  Q  V  A  S  L
4411 gacaagcatttgcgcaaccagcggcaattcatggatgagcaggca
      D  K  H  L  R  N  Q  R  Q  F  M  D  E  Q  A
4456 gccgagcgggagcacgagcgcgaggagttccagcaggagattcag
      A  E  R  E  H  E  R  E  E  F  Q  Q  E  I  Q
4501 aggctggaggggcagctccgccaggcggccaagccgcagccctgg
      R  L  E  G  Q  L  R  Q  A  A  K  P  Q  P  W
4546 ggccctcgcgacagccagcaggcgccgctggatggagaggttgag
      G  P  R  D  S  Q  Q  A  P  L  D  G  E  V  E
4591 ttgttacaacaaaagttgagagaaaagttggatgaatttaatgaa
      L  L  Q  Q  K  L  R  E  K  L  D  E  F  N  E
4636 ttggctatacagaaagagtcggcagatagacaagtgttaatgcag
      L  A  I  Q  K  E  S  A  D  R  Q  V  L  M  Q
4681 gaagaagaaattaaacgtctggaggagatgaacatcaacatcagg
      E  E  E  I  K  R  L  E  E  M  N  I  N  I  R
4726 aaaaaagtggcccagctccaggaagaagtggaaaaacagaaaaac
      K  K  V  A  Q  L  Q  E  E  V  E  K  Q  K  N
4771 atcgtgaaagggctggaacaggataaagaggtgttaaagaaacag
      I  V  K  G  L  E  Q  D  K  E  V  L  K  K  Q
4816 cagatgagtagcttgcttctggcgtccacgttgcagtctacacta
      Q  M  S  S  L  L  L  A  S  T  L  Q  S  T  L
4861 gatgcaggcagatgtcccgagcctccttcgggcagccctcctgag
      D  A  G  R  C  P  E  P  P  S  G  S  P  P  E
4906 ggtccagaaatacagttagaggtgacacagagagcactcctgcgg
      G  P  E  I  Q  L  E  V  T  Q  R  A  L  L  R
4951 cgcgagagcgaggttttggacttaaaagaacagctagaaaagatg
      R  E  S  E  V  L  D  L  K  E  Q  L  E  K  M
4996 aaaggtgacttagaaagtaaaaatgaagaaatactacatctgaac
      K  G  D  L  E  S  K  N  E  E  I  L  H  L  N
```

FIG. 13E

```
5041 ttaaaattggacatgcagaacagccagactgctgtcagcctcaga
      L  K  L  D  M  Q  N  S  Q  T  A  V  S  L  R
5086 gaacttgaggaagagaacacgagcttgaaggtcatatataccaga
      E  L  E  E  E  N  T  S  L  K  V  I  Y  T  R
5131 agttctgagattgaagagctgaaagccactattgaaaatctgcaa
      S  S  E  I  E  E  L  K  A  T  I  E  N  L  Q
5176 gagaatcagaaacgattacaaaaggagaaagcagaggaaattgaa
      E  N  Q  K  R  L  Q  K  E  K  A  E  E  I  E
5221 caactccatgaagtcattgagaagctgcagcacgagctgtccctc
      Q  L  H  E  V  I  E  K  L  Q  H  E  L  S  L
5266 atggggcctgtggtgcacgaagtcagcgacagtcaggctggcagt
      M  G  P  V  V  H  E  V  S  D  S  Q  A  G  S
5311 ctgcagagcgagctgctctgctcccaggccgggggccctcgtggg
      L  Q  S  E  L  L  C  S  Q  A  G  G  P  R  G
5356 caggccctacagggcgagctcgaggctgcgctggaagccaaggag
      Q  A  L  Q  G  E  L  E  A  A  L  E  A  K  E
5401 gccctgagccggctgctggctgaccaggagcgcaggcacagccag
      A  L  S  R  L  L  A  D  Q  E  R  R  H  S  Q
5446 gccctggaggccctgcagcagcgcctccagggcgcagaggaggct
      A  L  E  A  L  Q  Q  R  L  Q  G  A  E  E  A
5491 gcggagctacagctggctgagctggagcgcaatgtagccctcagg
      A  E  L  Q  L  A  E  L  E  R  N  V  A  L  R
5536 gaggctgaggtcgaagacatggcctcccggatccaggagttcgaa
      E  A  E  V  E  D  M  A  S  R  I  Q  E  F  E
5581 gcggccctgaaagcaaaggaagcgacgattgccgagagaaattta
      A  A  L  K  A  K  E  A  T  I  A  E  R  N  L
5626 gaaatcgacgctctgaaccagcggaaggcggcccactctgccgag
      E  I  D  A  L  N  Q  R  K  A  A  H  S  A  E
5671 ctggaggccgtcctgttggccttggcccgcatccgccgcgccctg
      L  E  A  V  L  L  A  L  A  R  I  R  R  A  L
5716 gagcagcagcccctggcagccggggcggcgcctcccgagctgcag
      E  Q  Q  P  L  A  A  G  A  A  P  P  E  L  Q
5761 tggctccgagcgcagtgtgcccgcctcagccgccagctgcaggtg
      W  L  R  A  Q  C  A  R  L  S  R  Q  L  Q  V
5806 ctgcaccagcggttcctgaggtgccaggtggagctggacaggcgg
      L  H  Q  R  F  L  R  C  Q  V  E  L  D  R  R
5851 caggcccgcagagccacagctcacacacgggtgcccggggcccac
      Q  A  R  R  A  T  A  H  T  R  V  P  G  A  H
5896 ccacagcctcgcatggatggtggcgccaaggcccaggtcaccggc
      P  Q  P  R  M  D  G  G  A  K  A  Q  V  T  G
5941 gacgtggaggcctcccatgatgctgctttggagccggttgtccct
      D  V  E  A  S  H  D  A  A  L  E  P  V  V  P
5986 gacccacagggtgatctgcagcctgtcctggtgacgttgaaggat
      D  P  Q  G  D  L  Q  P  V  L  V  T  L  K  D
6031 gcacctctctgcaagcaagaaggcgtgatgtcagtgctcaccgtc
      A  P  L  C  K  Q  E  G  V  M  S  V  L  T  V
6076 tgccagaggcagctgcagtcggagctgctcttggtgaaaaatgaa
      C  Q  R  Q  L  Q  S  E  L  L  L  V  K  N  E
6121 atgcgcctgagtctggaggacggcggcaagggtaaagaaaaagta
      M  R  L  S  L  E  D  G  G  K  G  K  E  K  V
6166 ctggaagattgtcagctgccgaaggtcgatctcgtagctcaggtg
      L  E  D  C  Q  L  P  K  V  D  L  V  A  Q  V
6211 aaacagcttcaggaaaaactgaaccgtttgctgtattccatgacc
      K  Q  L  Q  E  K  L  N  R  L  L  Y  S  M  T
6256 ttccagaatgtggatgctgccgacaccaaatctctgtggcccatg
      F  Q  N  V  D  A  A  D  T  K  S  L  W  P  M
```

FIG. 13 F

```
6301 gcctcagcacacctgttggagagcagctggagtgatgattcctgt
      A  S  A  H  L  L  E  S  S  W  S  D  D  S  C
6346 gacggagaagagcctgacatatcaccccacatagacacatgtgat
      D  G  E  E  P  D  I  S  P  H  I  D  T  C  D
6391 gccaatacagccacgggggtgtaactgatgttatcaaaaatcag
      A  N  T  A  T  G  G  V  T  D  V  I  K  N  Q
6436 gccatagacgcgtgtgatgccaatacaaccccagggggtgtaact
      A  I  D  A  C  D  A  N  T  T  P  G  G  V  T
6481 gatgttatcaaaaattgggattccttgataccagatgaaatgcca
      D  V  I  K  N  W  D  S  L  I  P  D  E  M  P
6526 gattctcccattcaagaaaaatcagaatgtcaggacatgtctctt
      D  S  P  I  Q  E  K  S  E  C  Q  D  M  S  L
6571 tcttcaccgaccagcgtacttggtggctcccgccaccagagccac
      S  S  P  T  S  V  L  G  G  S  R  H  Q  S  H
6616 actgcagaggctgggccccggaagagcccggtcgggatgctggac
      T  A  E  A  G  P  R  K  S  P  V  G  M  L  D
6661 ctgtcttcctggagctcccctgaggtcctcaggaaggactggacc
      L  S  S  W  S  S  P  E  V  L  R  K  D  W  T
6706 ctggagccctggcccagcctccccgtgacaccccactcaggagcc
      L  E  P  W  P  S  L  P  V  T  P  H  S  G  A
6751 ctgagcctgtgcagtgccgacacatccctgggggacagggcggac
      L  S  L  C  S  A  D  T  S  L  G  D  R  A  D
6796 acctcgctgccacagacccaggggccggggctgctttgttcccca
      T  S  L  P  Q  T  Q  G  P  G  L  L  C  S  P
6841 ggcgtgtctgcagcagcgctggcactgcagtgggccgagtctccg
      G  V  S  A  A  A  L  A  L  Q  W  A  E  S  P
6886 ccggctgacgaccaccatgtgcagaggacggctgtggagaaagat
      P  A  D  D  H  H  V  Q  R  T  A  V  E  K  D
6931 gtcgaagattttatcacaacatcctttgattctcaagaaacatta
      V  E  D  F  I  T  T  S  F  D  S  Q  E  T  L
6976 agttcacctcctcctggattagaaggaaaagctgatagaagtgag
      S  S  P  P  P  G  L  E  G  K  A  D  R  S  E
7021 aaaagtgacggctcgggttttggagcaagactgagcccggggtca
      K  S  D  G  S  G  F  G  A  R  L  S  P  G  S
7066 ggaggccctgaggctcaaactgctggtcctgtgacccctgcttcc
      G  G  P  E  A  Q  T  A  G  P  V  T  P  A  S
7111 atctctggaaggtttcagccgctgccggaagccatgaaggagaag
      I  S  G  R  F  Q  P  L  P  E  A  M  K  E  K
7156 gaagtgcgtccgaagcacgtgaaggctttactgcagatggtgcgt
      E  V  R  P  K  H  V  K  A  L  L  Q  M  V  R
7201 gacgagagccaccagatcctggcgctgtcagaaggccttgcaccc
      D  E  S  H  Q  I  L  A  L  S  E  G  L  A  P
7246 ccaagcggcgagccacacccaccccggaaggaagacgagatacag
      P  S  G  E  P  H  P  P  R  K  E  D  E  I  Q
7291 gacatctcgctccatgggggaaagacgcaggaagtgcccaccgcg
      D  I  S  L  H  G  G  K  T  Q  E  V  P  T  A
7336 tgccccgattggagaggggaccttctgcaggttgtgcaagaggcc
      C  P  D  W  R  G  D  L  L  Q  V  V  Q  E  A
7381 tttgaaaaagagcaggagatgcaggggttgagctgcagccccga
      F  E  K  E  Q  E  M  Q  G  V  E  L  Q  P  R
7426 ctcagtggctcagatctgggggtcacagctccctgctcgaaagg
      L  S  G  S  D  L  G  G  H  S  S  L  L  E  R
7471 ctggagaagatcatccgtgagcagggagacctgcaggaaaagtcc
      L  E  K  I  I  R  E  Q  G  D  L  Q  E  K  S
7516 ctggagcatcttcgcttgccggaccggagcagcctgctgtccgag
      L  E  H  L  R  L  P  D  R  S  S  L  L  S  E
```

FIG. 13G

```
7561 atccaggcgctgcgtgcccagctgcgcatgacgcacctgcagaac
      I  Q  A  L  R  A  Q  L  R  M  T  H  L  Q  N
7606 caggagaagctgcagcacttgcgcacggcgctgacaagcgcagag
      Q  E  K  L  Q  H  L  R  T  A  L  T  S  A  E
7651 gcgcgcgggagccagcaggagcaccagctgcgcaggcaggttgaa
      A  R  G  S  Q  Q  E  H  Q  L  R  R  Q  V  E
7696 ctgctggcttataaagtagagcaggagaagtgcattgctggtgac
      L  L  A  Y  K  V  E  Q  E  K  C  I  A  G  D
7741 ttgcagaagacgctgagtgaagagcaagagaaggcaaacagcgtg
      L  Q  K  T  L  S  E  E  Q  E  K  A  N  S  V
7786 cagaagctcctggcggcggagcagactgtagtgcgagatttgaag
      Q  K  L  L  A  A  E  Q  T  V  V  R  D  L  K
7831 tccgacctctgtgagagcaggcagaagagcgaacagctgtcccgg
      S  D  L  C  E  S  R  Q  K  S  E  Q  L  S  R
7876 tccctctgcgaggtgcagcaggaggtcctccagctgagatccatg
      S  L  C  E  V  Q  Q  E  V  L  Q  L  R  S  M
7921 ctgagcagtaaggagaacgagctgaaggccgcgcttcaggagctg
      L  S  S  K  E  N  E  L  K  A  A  L  Q  E  L
7966 gagagtgagcaggggaaggggcgtgccctgcagagccagctggag
      E  S  E  Q  G  K  G  R  A  L  Q  S  Q  L  E
8011 gaggagcagctgcggcacctgcagagggagagccagagtgccaag
      E  E  Q  L  R  H  L  Q  R  E  S  Q  S  A  K
8056 gccctggaggagctgcgggcgtctttggagacacagcgtgctcag
      A  L  E  E  L  R  A  S  L  E  T  Q  R  A  Q
8101 agcagtcgactctgcgtggcactgaaacacgagcagacggccaag
      S  S  R  L  C  V  A  L  K  H  E  Q  T  A  K
8146 gacaacctgcagaaggagctgcgtatcgagcactcacgctgcgag
      D  N  L  Q  K  E  L  R  I  E  H  S  R  C  E
8191 gccttgctggctcaggagcggagccagctctctgagctccagaag
      A  L  L  A  Q  E  R  S  Q  L  S  E  L  Q  K
8236 gaccttgcggctgagaagagccgcaccctggagctgtcagaggcc
      D  L  A  A  E  K  S  R  T  L  E  L  S  E  A
8281 ttgcggcacgagcggctcctgaccgagcagctgagccagaggaca
      L  R  H  E  R  L  L  T  E  Q  L  S  Q  R  T
8326 caggaggcttgcgtgcaccaggacacacaggcccatcacgctctg
      Q  E  A  C  V  H  Q  D  T  Q  A  H  H  A  L
8371 ctgcagaagctgaaggaggagaagtcccgggtggtggacttgcaa
      L  Q  K  L  K  E  E  K  S  R  V  V  D  L  Q
8416 gcgatgcttgaaaaggtgcagcagcaagccctgcattctcagcag
      A  M  L  E  K  V  Q  Q  Q  A  L  H  S  Q  Q
8461 cagcttgaggctgaggctcagaagcactgtgaggcgctcaggaga
      Q  L  E  A  E  A  Q  K  H  C  E  A  L  R  R
8506 gagaaggaggtaagtgccacactgaagtcgacggtggaagccctg
      E  K  E  V  S  A  T  L  K  S  T  V  E  A  L
8551 cacacccaaaaacgagagctgagatgctctctggagagagagagg
      H  T  Q  K  R  E  L  R  C  S  L  E  R  E  R
8596 gagaaaccagcgtggttgcaggcagaattagagcagtcacaccca
      E  K  P  A  W  L  Q  A  E  L  E  Q  S  H  P
8641 cggttgaaagagcaagaaggacgcaaggctgcgaggaggagcgcg
      R  L  K  E  Q  E  G  R  K  A  A  R  R  S  A
8686 gaggccaggcagagcccagcggctgcggagcagtggaggaagtgg
      E  A  R  Q  S  P  A  A  A  E  Q  W  R  K  W
8731 cagagagacaaggagaagctgcgagaattagaactgcagcgtcag
      Q  R  D  K  E  K  L  R  E  L  E  L  Q  R  Q
8776 cgtgacttgcataagatcaagcagcttcagcagacagtgagagac
      R  D  L  H  K  I  K  Q  L  Q  Q  T  V  R  D
```

FIG. 13H

```
8821 ctggagtcgaaggacgaggtgcctggcagccgcctccacctaggt
      L  E  S  K  D  E  V  P  G  S  R  L  H  L  G
8866 tctgcccgcagggctgccggctcggatgcggaccacctccgggaa
      S  A  R  R  A  A  G  S  D  A  D  H  L  R  E
8911 cagcagcgagagctggaggcgatgaggcagcggctgctctctgcc
      Q  Q  R  E  L  E  A  M  R  Q  R  L  L  S  A
8956 gcccggcttctcaccagcttcaccagccaggccgtggacaggaca
      A  R  L  L  T  S  F  T  S  Q  A  V  D  R  T
9001 gttaatgattggacgtcatccaatgagaaagcagtgatgtcttta
      V  N  D  W  T  S  S  N  E  K  A  V  M  S  L
9046 ctgcacacgttggaggagctgaagtctgacttgagcaggcccacc
      L  H  T  L  E  E  L  K  S  D  L  S  R  P  T
9091 tcctcccagaaaaaaatggcagcagagctgcagttccagtttgtg
      S  S  Q  K  K  M  A  A  E  L  Q  F  Q  F  V
9136 gacgtcctgctgaaagacaatgtttccctcacaaaagcgctcagc
      D  V  L  L  K  D  N  V  S  L  T  K  A  L  S
9181 acggtgacccaggagaagctggagctgagcagagccgtgtctaag
      T  V  T  Q  E  K  L  E  L  S  R  A  V  S  K
9226 cttgagaagttgctgaagcaccatctgcagaagggctgcagccca
      L  E  K  L  L  K  H  H  L  Q  K  G  C  S  P
9271 agcaggtcggaaaggtctgcttggaagccagacgaaacggctcca
      S  R  S  E  R  S  A  W  K  P  D  E  T  A  P
9316 cagagttccctgaggcgcccagaccccggccggcttccaccagct
      Q  S  S  L  R  R  P  D  P  G  R  L  P  P  A
9361 gccagcgaggaagcacacaccagcaatgtcaagatggaaaaattg
      A  S  E  E  A  H  T  S  N  V  K  M  E  K  L
9406 tacctgcattacttgagagcagagagctttagaaaagctctgatt
      Y  L  H  Y  L  R  A  E  S  F  R  K  A  L  I
9451 tatcaaaagaagtatcttttgctgttgattggtggattccaggat
      Y  Q  K  K  Y  L  L  L  L  I  G  G  F  Q  D
9496 tctgaacaagaaacactctccatgattgcccatttgggggtattt
      S  E  Q  E  T  L  S  M  I  A  H  L  G  V  F
9541 ccttccaaagcagaacggaaaatcacatctcgtcctttcaccagg
      P  S  K  A  E  R  K  I  T  S  R  P  F  T  R
9586 ttccgcacggccgtcagggtggtcattgcaatattaagattacgt
      F  R  T  A  V  R  V  V  I  A  I  L  R  L  R
9631 tttttggttaagaaatggcaagaagtagatcggaaaggagctctg
      F  L  V  K  K  W  Q  E  V  D  R  K  G  A  L
9676 gcacaaggcaaagcccctcgcccagggccccgagcacgacagccg
      A  Q  G  K  A  P  R  P  G  P  R  A  R  Q  P
9721 cagtctccacccagaaccagagagtccccccccaacccgggatgta
      Q  S  P  P  R  T  R  E  S  P  P  T  R  D  V
9766 ccctctggccacaccagggaccctgccagaggccgcagactggca
      P  S  G  H  T  R  D  P  A  R  G  R  R  L  A
9811 gcagcagcctccccacacagtgggggaagagccactccatcccca
      A  A  A  S  P  H  S  G  G  R  A  T  P  S  P
9856 aattcaagattagaaagatccctgactgcttctcaagatccagaa
      N  S  R  L  E  R  S  L  T  A  S  Q  D  P  E
9901 cattccttgacagagtatattcaccatttagaagtgatccagcaa
      H  S  L  T  E  Y  I  H  H  L  E  V  I  Q  Q
9946 agattgggaggggtactaccagattctacttcaaagaaatcctgc
      R  L  G  G  V  L  P  D  S  T  S  K  K  S  C
9991 cacccgatgattaaacagtga 10011                    (SEQ ID NO:3)
      H  P  M  I  K  Q  *                          (SEQ ID NO:4)
```

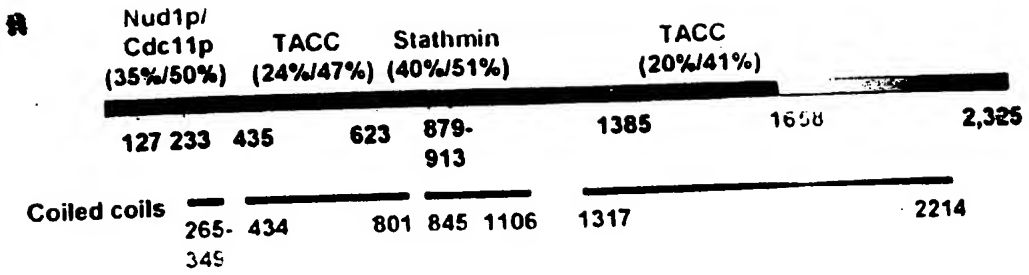

A
Nud1p/
Cdc11p
(35%/50%)
TACC
(24%/47%)
Stathmin
(40%/51%)
TACC
(20%/41%)
127 233 435 623 879-
913
1385
1698
2,325
Coiled coils
265-
349
434
801 845 1106
1317
2214

Figure 14

FIG. 16A

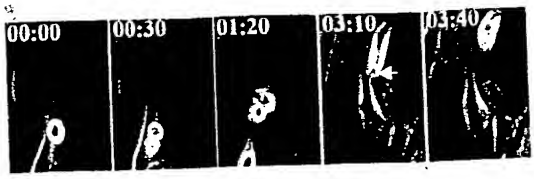


FIG. 16B

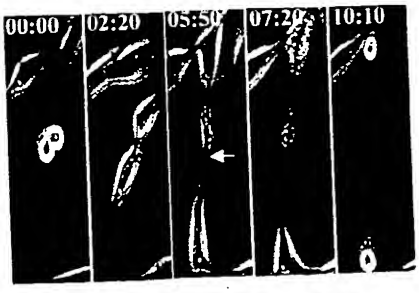
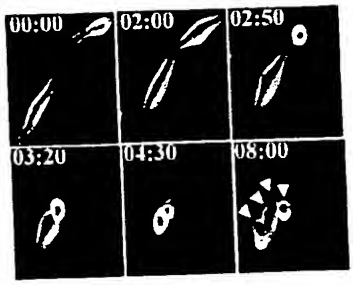


FIG. 16C



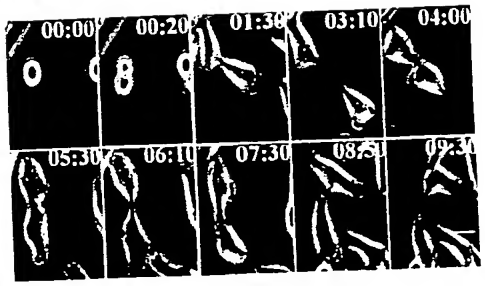


FIG. 16D

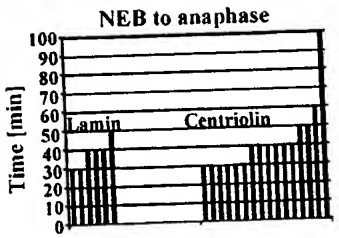


FIG. 16E

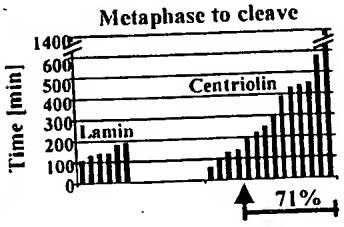


FIG. 16F

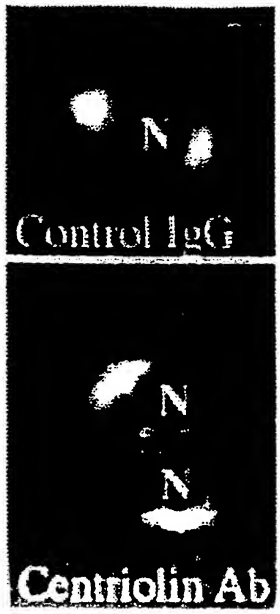


Figure 17